SUGAR BULLETIN No. 26.

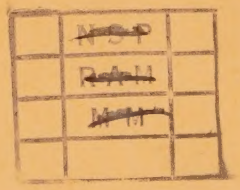
DEPARTMENT OF AGRICULTURE,
BRITISH GUIANA.

FIELD EXPERIMENTS WITH SUGAR CANE, XXVI.

THE VARIETY AND FERTILIZER POSITION OF THE SUGAR INDUSTRY, XXIII.

REPORT ON THE SUGAR EXPERIMENT STATIONS FOR THE YEAR 1957.

LEAF SCALD RATINGS OF SUGAR CANE VARIETIES IN BRITISH GUIANA.



THE "DAILY CHRONICLE," LTD., GEORGETOWN, DEMERARA.
1958.

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FIELD EXPERIMENTS WITH SUGAR CANE, XXVI.

INTRODUCTION.

The field experiments which were reaped in 1957 consisted of eighty nine (89) Cane Variety Experiments, three (3) experiments on the Growth and Ripening of four "type" cane varieties, ten (10) experiments involving fertilizers and soil amendments and one (1) experiment on cultivation methods.

RAINFALL.

The rainfall at the Sugar Experiment Station during 1957 was 55.81 inches or 53.8% of the mean rainfall over the period 1921—1956. Reference to the Table below shews that for each month of the year the rainfall was below the annual average. With the exception of May, these deficits were appreciable and relatively greater in the months of normally moderate precipitation.

Comparison of the Monthly Rainfall at Sophia Experiment Station for 1957 with the average for 1921—1956.

Month.	Actual Rainfall 1957. Inches.	Average Rainfall 1921—1956. Inches.	Excess or Deficit. Inches.
January	4.95	10.68	— 5.73
February	1.20	5.08	— 3.88
March	.18	5.07	— 4.89
April	1.72	6.97	— 5.25
May	12.00	12.75	— .75
June	8.91	14.81	— 5.90
July	7.85	11.97	— 4.12
August	2.01	8.13	— 6.12
September	1.33	3.48	— 2.15
October	2.30	3.89	— 1.59
November	1.99	6.55	— 4.56
December	11.37	14.37	— 3.00
Total	55.81	103.75	—47.94

1. VARIETY TRIALS, 1957.

BY

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AND

C. CAMERON, *Field Manager.*

The results of the 1957 series of Variety Trials are presented and discussed under the following captions:—

A. Variety Sorting Trials.

B. Plant Cane Variety Trials.

C. First Ratoon Variety Trials.

D. Second Ratoon Variety Trials.

E. Variety Performance Summary.

F. General Summary and Recommendations.

A. VARIETY SORTING TRIALS.

Fourteen (14) Variety Sorting Trials were reaped in 1957 and are classified according to cycle, series, soil type and location as follows:—

SORTING TRIALS, 1957.

Cycle.	Series.	Soil Type.	Location	Index Nos. of Trials.
Plants	B. 1952 Series	Clay Soil	Sophia	156, 157.
	D.B. 1953 Series	Clay Soil	Sophia	158, 159, 160, 161.
First Ratoons ..	B. 1951 Series	Clay Soil	Sophia	133.
	B. 1951 Series	Pegassy Clay	Uitvlugt	135.
	D.M. 1953 Series	Clay Soil	Sophia	132, 134.
Second Ratoons ..	B. 1950 Series	Clay Soil	Sophia	104.
	B. 1950 Series	Pegassy Clay	Uitvlugt	107.
	D. 1952 Series	Clay Soil	Sophia	105, 106.

The results of the above sorting trials are presented in Table I.

TABLE I— **Results of Plant Cane "Variety Sorting" Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Trial No.
	Sophia, Field 9 East "B". Reaped 4.4.57 at 11.00 months. Rainfall:—105.75 inches.						
MEANS OF 4 PLOTS:	B. 52158	40.79	14.60	84.1	5.95	119.48	156
	B. 5235	38.55	14.84	85.2	5.72	114.86	
	B. 52316	40.09	13.83	85.2	5.54	111.24	
	H. 39-3633	37.75	14.19	88.4	5.35	107.43	
	*B. 41227	37.40	14.03	85.8	5.25	105.42	
	B. 5213	40.38	12.85	83.1	5.19	104.22	
	B. 5277	38.17	13.57	86.4	5.18	104.02	
	B. 52144	35.08	14.75	84.3	5.17	103.82	
	B. 52341	35.53	13.64	84.5	4.85	97.39	
	B. 52135	36.08	13.39	85.9	4.83	96.99	
	B. 52214	31.46	15.16	87.2	4.77	95.78	
	B. 52389	32.05	14.41	86.0	4.62	92.77	
	B. 52256	33.76	13.54	81.4	4.57	91.77	
	B. 5212	30.25	13.41	82.5	4.06	81.53	
	B. 52306	26.76	13.83	83.2	3.70	74.30	
	Mean:				4.98	100.00	
	Significant Difference, 20:1:				1.06	21.29	
	Sophia, Field 9 East "C". Reaped 23.4.57 at 11.25 months. Rainfall:—102.92 inches.						
MEANS OF 4 PLOTS:	*B. 41227	46.67	15.70	85.9	7.33	129.28	157
	H. 44-3098	46.63	15.48	87.7	7.22	127.34	
	H. 38-2915	50.92	13.89	85.8	7.07	124.69	
	B. 52253	45.81	14.92	85.7	6.83	120.46	
	B. 52315	43.94	14.69	83.4	6.45	113.76	
	B. 52257	42.15	15.18	84.6	6.40	112.87	
	B. 51311	43.76	14.54	84.5	6.36	112.17	
	B. 52107	44.64	13.97	85.6	6.24	110.05	
	B. 52222	42.38	14.43	84.7	6.11	107.76	
	H. 39-7028	42.59	14.22	88.9	6.05	106.70	
	B. 52162	42.18	14.08	85.4	5.94	104.76	
	B. 5121	43.70	13.54	83.3	5.92	104.41	
	B. 52321	39.06	15.02	86.0	5.87	103.53	
	B. 5124	37.27	15.66	84.0	5.83	102.82	
	H. 39-5803	36.51	14.97	86.5	5.47	96.47	
	B. 51105	36.31	14.49	84.3	5.26	92.77	
	H. 37-1933	34.83	14.74	85.4	5.13	90.48	
	H. 38-4443	39.65	12.62	80.4	5.00	88.18	
	B. 52184	33.63	14.53	86.2	4.89	86.24	
	P.R. 1000	33.17	14.30	85.1	4.74	83.60	
	B. 52242	35.96	13.15	78.7	4.73	83.42	
	B. 52298	31.71	14.18	79.2	4.49	79.19	
	C.P. 44-155	28.91	14.97	87.6	4.33	76.37	
	C.P. 34-79	26.69	15.88	87.6	4.24	74.78	
	F. 36-819	26.48	14.11	85.4	3.73	65.78	
	Mean:				5.67	100.00	
	Significant Difference, 20:1:				1.02	17.99	

* **Standard Cane.**

TABLE I (Contd.)—**Results of Plant Cane "Variety Sorting" Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Trial No.
					Tons.	% Mean.	
	Sophia, Field 4 West "B". Reaped 13.9.57 at 12.25 months. Rainfall:—79.04 inches.						
MEANS OF 5 PLOTS:	*B. 41227	57.57	14.27	88.2	8.22	128.84	158
	D.B. 255/53	55.84	14.18	88.8	7.92	124.14	
	B. 52178	55.65	13.47	89.2	7.50	117.55	
	N.C.O. 330	51.18	14.27	87.7	7.30	114.42	
	H. 39-5803	47.96	14.70	91.6	7.05	110.50	
	D.B. 72/53	44.71	13.98	88.1	6.53	102.35	
	D.B. 36/53	47.94	13.57	88.6	6.51	102.04	
	D.B. 54/53	53.06	12.25	86.3	6.50	101.88	
	C.C. 102	49.73	12.30	85.9	6.12	95.92	
	D.B. 71/53	47.22	12.89	86.2	6.09	95.45	
	D.B. 80/53	45.39	12.65	84.4	5.74	89.97	
	D.B. 62/53	41.91	13.53	86.2	5.67	88.87	
	D.B. 85/53	65.39	8.62	75.4	5.64	88.40	
	D.B. 12/53	43.79	12.47	84.0	5.46	85.58	
	G. 176	32.71	15.27	88.2	4.99	78.21	
	H. 38-4443	43.68	10.80	79.8	4.92	77.11	
	Mean:				6.38	100.00	
	Significant Difference, 20:1:				1.05	16.46	
	Sophia, Field 4 West "A". Reaped 19.9.57 at 12.00 months. Rainfall:—82.16 inches.						
MEANS OF 4 PLOTS:	*B. 41227	58.68	13.45	87.3	7.89	127.46	159
	D.B. 85/53	66.01	11.79	83.4	7.78	125.69	
	D.B. 169/53	52.12	14.11	90.5	7.35	118.74	
	D.B. 205/53	52.99	13.63	87.0	7.22	116.64	
	D.B. 74/53	58.10	12.03	82.9	6.99	112.92	
	D.B. 167/53	51.17	13.21	88.0	6.76	109.21	
	D.B. 79/53	52.95	12.59	83.5	6.67	107.75	
	D.B. 223/53	57.51	11.18	81.4	6.42	103.72	
	D.B. 81/53	47.56	13.14	86.9	6.25	100.97	
	D.B. 164/53	54.26	11.43	82.0	6.20	100.16	
	D.B. 78/53	44.41	13.46	87.9	5.98	96.61	
	D.B. 137/53	47.62	11.76	84.2	5.60	90.47	
	D.B. 73/53	46.71	11.95	82.5	5.58	90.15	
	D.B. 231/53	48.70	11.36	84.1	5.53	89.34	
	D.B. 143/53	52.39	10.25	79.7	5.37	86.75	
	D.B. 76/53	43.50	12.33	85.7	5.36	86.59	
	D.B. 80/53	47.28	11.13	81.9	5.26	84.98	
	D.B. 77/53	37.86	13.81	88.9	5.23	84.49	
	D.B. 75/53	43.34	11.95	84.8	5.18	83.68	
	D.B. 233/53	48.19	10.65	79.5	5.13	82.88	
	Mean:				6.19	100.00	
	Significant Difference, 20:1:				1.44	23.26	

*** Standard Cane.**

TABLE I.—(Contd.) —**Results of Plant Cane "Variety Sorting" Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Trial No.
	Sophia, Field 3 East "C" Reaped 24.10.57 at 11.75 months. Rainfall:—65.14 inches.						
MEANS OF 5 PLOTS:	*B. 41227	51.64	14.05	86.8	7.26	146.67	160
	D.B. 169/53	43.32	14.97	91.1	6.49	131.11	
	D.B. 172/53	43.89	13.36	85.3	5.86	118.38	
	D.B. 167/53	39.92	14.55	84.9	5.81	117.37	
	D.B. 231/53	45.56	11.96	82.6	5.45	110.10	
	D.B. 34/53	36.87	12.59	81.9	4.64	93.74	
	D.B. 87/53	45.20	9.69	69.6	4.38	88.48	
	D.B. 233/53	40.01	10.83	79.7	4.34	87.68	
	D.B. 47/53	40.75	9.93	75.3	4.04	81.62	
	D.B. 45/53	31.40	12.74	84.0	4.00	80.81	
	D.B. 60/53	41.70	9.03	74.5	3.77	76.16	
	D.B. 138/53	32.44	10.32	78.4	3.35	67.68	
	Mean:				4.95	100.00	
	Significant Difference, 20:1:				.97	19.60	
	Sophia, Field 3 East "D" Reaped 29.10.57 at 11.00 months. Rainfall:—61.37 inches.						
MEANS OF 5 PLOTS:	D.B. 169/53	44.99	15.78	91.1	7.10	148.54	161
	*B. 41227	45.58	12.90	84.7	5.88	123.01	
	B. 46364	43.72	12.97	87.0	5.67	118.62	
	D.B. 233/53	43.64	12.10	81.2	5.28	110.46	
	D.B. 85/53	52.43	9.40	71.5	4.55	95.19	
	D.B. 164/53	43.54	10.42	77.3	4.54	94.98	
	D.B. 167/53	34.97	12.83	78.6	4.49	93.93	
	D.B. 54/53	41.54	10.53	79.1	4.37	91.42	
	D.B. 62/53	33.50	11.88	81.2	3.98	83.26	
	D.B. 80/53	33.02	11.99	81.6	3.96	82.85	
	D.B. 73/53	34.88	10.95	77.8	3.82	79.92	
	D.B. 74/53	29.74	12.38	81.8	3.68	76.99	
	Mean:				4.78	100.00	
	Significant Difference, 20: 1:				1.48	30.96	

*** Standard Cane.**

TABLE I.—(Contd.)—**Results of First Ratoon "Variety Sorting" Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Combined results for 2 Crops, Plants. and 1st Ratoons. Variety.	Combined results for 2 Crops, Plants. and 1st Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
	Sophia, Field 13 West "B" Reaped 27.3.57 at 11.00 months. Rainfall:—108.89 inches.								
MEANS OF 4 PLOTS:	*B. 41227	33.02	14.07	88.0	4.64	132.95	*B. 41227	12.71	132
	D.M. 22/53	34.71	12.49	86.0	4.33	124.06	D.M. 1/53	11.04	
	D.M. 6/53	32.90	12.78	87.6	4.21	120.63	D.M. 6/53	10.69	
	D.M. 1/53	32.07	13.10	89.6	4.20	120.34	D.M. 4/53	10.25	
	D.M. 21/53	34.81	11.77	84.7	4.10	117.48	D.M. 22/53	10.14	
	D.M. 42/53	29.42	13.26	87.4	3.90	111.75	D.M. 51/53	9.84	
	D.M. 4/53	34.64	11.22	84.0	3.89	111.46	D.M. 42/53	9.56	
	D.M. 27/53	30.16	12.14	85.6	3.66	104.87	D.M. 27/53	9.46	
	D.M. 25/53	31.73	11.38	83.3	3.61	103.44	D.M. 18/53	9.39	
	D.M. 8/53	28.06	12.73	85.5	3.57	102.29	D.M. 21/53	9.12	
	D.M. 15/53	32.44	11.00	83.2	3.57	102.29	D.M. 25/53	9.09	
	D.M. 16/55	26.34	12.23	86.1	3.22	92.26	D.M. 8/53	9.09	
	D.M. 51/53	24.46	12.94	85.4	3.17	90.83	D.M. 15/53	9.00	
	D.M. 18/53	26.71	11.73	85.8	3.13	89.68	D.M. 16/53	8.46	
	D.M. 33/53	29.10	10.56	82.5	3.07	87.97	D.M. 49/56	7.88	
	D.M. 41/53	26.83	11.30	84.9	3.03	86.82	D.M. 33/53	7.68	
	D.M. 38/53	25.74	10.80	81.9	2.78	79.66	D.M. 41/53	7.68	
	D.M. 49/53	24.54	11.15	85.6	2.74	78.51	D.M. 38/53	7.67	
	D.M. 46/53	21.81	11.56	81.7	2.52	72.21	D.M. 46/53	7.61	
	D.M. 7/53	24.10	10.05	79.3	2.42	69.34	D.M. 7/53	6.51	
	Mean:				3.49	100.00			
	Significant Difference, 20:1:				.74	21.20			
	Sophia, Field 13 West "A" Reaped 29.3.57 at 10.75 months. Rainfall:—104.43 inches.								
MEANS OF 4 PLOTS:	B. 5121	42.28	15.84	90.3	6.69	135.98	B. 5121	15.75	133
	B. 51134	38.98	15.66	88.2	6.10	123.98	*B. 41227	14.93	
	B. 51131	36.12	16.44	90.1	5.94	120.73	B. 5124	14.55	
	B. 5124	35.86	16.55	90.3	5.93	120.53	B. 51116	14.46	
	B. 51353	43.39	13.34	85.1	5.79	117.68	B. 51131	14.41	
	B. 51355	42.08	13.46	85.1	5.66	115.04	B. 51353	14.10	
	B. 51129	36.16	15.43	89.5	5.58	113.41	B. 51355	13.62	
	*B. 41227	35.92	15.41	89.5	5.53	112.40	B. 51129	13.40	
	B. 51211	34.01	15.76	91.8	5.36	108.94	B. 51183	13.24	
	B. 51116	34.20	15.62	93.9	5.34	108.54	B. 51134	13.15	
	B. 51183	37.29	14.08	89.2	5.25	106.71	B. 51211	12.71	
	B. 51311	31.08	15.06	85.5	4.68	95.12	B. 51167	11.88	
	B. 51192	29.28	15.18	88.1	4.45	90.45	B. 51311	11.83	
	B. 51167	29.33	14.45	87.3	4.24	86.18	B. 51259	11.49	
	B. 51105	27.36	14.62	87.1	4.00	81.30	B. 51192	11.26	
	B. 51190	26.70	14.21	86.6	3.79	77.03	B. 51105	10.98	
	B. 5143	28.12	12.94	84.1	3.64	73.98	B. 5143	10.72	
	B. 51259	26.87	13.39	84.8	3.60	73.17	B. 51190	10.64	
	B. 51156	23.81	14.45	85.3	3.44	69.92	B. 51321	10.25	
	B. 51321	22.48	14.96	88.9	3.36	68.29	B. 51156	9.65	
	Mean:				4.92	100.00			
	Significant Difference, 20:1:				.71	14.43			

* Standard Cane.

TABLE I.—(Contd.)—**Results of First Ratoon "Variety Sorting" Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Combined results for 2 Crops, Plants and 1st Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre, Tons.	
	Sophia, Field 16 West "B". Reaped 29.8.57 at 12.00 months. Rainfall:—92.37 inches.								
MEANS OF 4 PLOTS:	*B. 41227	38.68	15.44	89.6	5.97	157.94	*B. 41227	13.22	134
	D.M. 135/53	30.98	14.46	89.2	4.48	118.52	D.M. 174/53	10.66	
	D.M. 179/53	32.75	13.35	84.7	4.37	115.61	D.M. 179/53	10.64	
	D.M. 150/53	30.85	13.88	85.3	4.28	113.23	D.M. 163/53	10.32	
	D.M. 174/53	31.47	13.34	85.9	4.20	111.11	D.M. 123/53	10.27	
	D.M. 163/53	32.45	12.52	85.8	4.06	107.41	D.M. 110/53	10.12	
	D.M. 110/53	29.41	13.69	90.8	4.03	106.61	D.M. 150/53	10.05	
	D.M. 112/53	26.37	14.81	88.8	3.91	103.44	D.M. 135/53	10.04	
	D.M. 123/53	28.09	13.70	88.2	3.85	101.85	D.M. 112/53	9.56	
	D.M. 131/53	31.15	11.98	83.7	3.73	98.68	D.M. 162/53	9.18	
	D.M. 130/53	28.55	13.02	85.9	3.71	98.15	D.M. 145/53	8.87	
	D.M. 145/53	28.43	13.01	84.2	3.70	97.88	D.M. 129/53	8.75	
	D.M. 162/53	28.70	12.75	86.0	3.66	96.83	D.M. 169/53	8.69	
	D.M. 143/53	27.42	12.55	85.6	3.44	91.01	D.M. 116/53	8.56	
	D.M. 160/53	25.94	13.06	81.1	3.39	89.68	D.M. 131/53	8.40	
	D.M. 129/53	25.32	13.10	83.5	3.32	87.83	D.M. 115/53	8.35	
	D.M. 116/53	23.72	13.46	84.5	3.19	84.39	D.M. 130/53	8.18	
	D.M. 115/53	23.93	13.35	84.6	3.19	84.39	D.M. 160/53	8.05	
	D.M. 169/53	21.26	14.32	88.0	3.04	80.42	D.M. 143/53	8.03	
	D.M. 154/53	23.31	11.37	81.9	2.65	70.11	D.M. 154/53	7.29	
	Mean:				3.78	100.00			
	Significant Difference, 20:1:				.61	16.23			

*** Standard Cane.**

TABLE I.—(Contd.)—**Results of Second Ratoon "Variety Sorting" Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Combined Results for 3 Crops, Plants, 1st and 2nd Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre Tons.	
	Sophia, Field 13 East "B". Reaped 21.3.57 at 12.00 months. Rainfall:—111.23 inches.								
MEANS OF 4 PLOTS:	B. 49119	41.90	14.77	87.8	6.19	143.29	B. 49119	19.35	104
	*B. 41227	37.06	15.44	89.3	5.72	132.41	*B. 41227	18.57	
	B. 50345	28.63	17.57	92.2	5.03	116.44	B. 50112	18.05	
	B. 50112	33.22	15.11	89.0	5.02	116.20	B. 50267	17.82	
	B. 50135	31.57	15.88	90.1	5.01	115.97	B. 5037	17.02	
	B. 50267	33.04	15.10	87.8	4.99	115.51	B. 50135	16.99	
	B. 50109	34.53	14.38	87.5	4.97	115.05	B. 50155	16.64	
	B. 50155	35.24	13.96	88.1	4.92	113.89	B. 50347	16.41	
	B. 5037	30.58	15.92	89.9	4.87	112.73	B. 50345	15.70	
	B. 50347	35.50	13.37	87.3	4.75	109.95	B. 50115	15.08	
	B. 50126	27.72	16.53	92.0	4.58	106.02	B. 50109	15.02	
	B. 50153	29.97	14.90	87.6	4.47	103.47	B. 50352	14.97	
	B. 50352	32.70	13.31	87.3	4.35	100.69	B. 50311	14.80	
	B. 5011	27.91	15.52	87.5	4.33	100.23	B. 5011	14.71	
	B. 5047	26.60	15.45	87.4	4.11	95.14	B. 50268	14.62	
	B. 50311	26.52	15.30	90.4	4.06	93.98	B. 50126	14.36	
	B. 5019	25.81	15.01	88.1	3.87	89.58	B. 50153	14.24	
	B. 50268	26.01	14.36	87.3	3.73	86.34	B. 5019	13.63	
	B. 50115	28.26	12.82	86.8	3.62	83.80	B. 5047	13.06	
	B. 50141	24.53	14.63	87.5	3.59	83.10	B. 50141	13.02	
	B. 5073	27.54	11.67	84.7	3.22	74.54	B. 50377	12.21	
	B. 50377	21.52	14.83	87.1	3.19	73.84	B. 50370	12.19	
	B. 50166	22.81	13.88	88.8	3.17	73.38	B. 50166	12.08	
	B. 50210	23.69	13.19	82.7	3.12	72.22	B. 50210	11.63	
	B. 50370	21.27	14.38	87.9	3.06	70.83	B. 5073	11.15	
	Mean:				4.32	100.00			
	Significant Difference, 20:1:				.90	20.83			

* **Standard Cane.**

TABLE I.—(Contd.)—**Results of Second Ratoon "Variety Sorting" Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Variety.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
	Sophia, Field 5 East "B". Reaped 15.8.57 at 11.75 months. Rainfall:—82.81 inches.								
MEANS OF 4 PLOTS.	*B. 41227	37.85	13.95	89.9	5.28	131.02	D. 13/52	19.44	105
	D. 13/52	32.80	14.44	89.8	4.74	117.61	D. 26/52	18.03	
	D. 18/52	31.76	14.37	88.6	4.56	113.15	*B. 41227	17.77	
	D. 26/52	29.57	14.95	89.7	4.41	109.43	D. 6/52	16.99	
	D. 2/52	30.91	14.27	88.9	4.41	109.43	D. 35/52	16.95	
	D. 33/52	30.10	14.58	90.0	4.39	108.93	D. 30/52	16.85	
	D. 6/52	28.92	14.88	91.8	4.30	106.70	D. 14/52	16.66	
	D. 21/52	28.80	14.53	89.6	4.18	103.72	D. 28/52	16.65	
	D. 35/52	28.11	14.72	91.6	4.14	102.73	D. 22/52	16.64	
	D. 12/52	30.00	13.67	88.7	4.10	101.74	D. 8/52	16.44	
	D. 8/52	26.48	15.40	90.1	4.08	101.24	D. 27/52	16.43	
	D. 22/52	28.28	14.42	88.9	4.08	101.24	D. 18/52	16.41	
	D. 28/52	28.45	14.09	86.8	4.01	99.50	D. 47/52	16.33	
	D. 27/52	30.23	13.23	85.3	4.00	99.26	D. 48/52	16.22	
	D. 4/52	25.88	15.39	90.4	3.98	98.76	D. 2/52	16.17	
	D. 14/52	28.42	13.89	89.0	3.95	98.01	D. 12/52	15.44	
	D. 30/52	25.21	15.62	89.9	3.94	97.77	D. 33/52	15.44	
	D. 48/52	28.66	13.53	89.6	3.88	96.28	D. 21/52	15.43	
	D. 47/52	26.14	14.63	87.2	3.83	95.04	D. 4/52	15.25	
	D. 9/52	27.96	13.51	88.6	3.78	93.80	D. 42/52	14.72	
	D. 31/52	24.33	14.59	91.0	3.55	88.09	D. 24/52	14.13	
	D. 23/52	25.83	13.58	87.7	3.50	86.85	D. 23/52	14.13	
	D. 42/52	22.17	14.91	91.1	3.31	82.13	D. 9/52	13.95	
	D. 24/52	25.22	13.09	87.1	3.30	81.89	D. 31/52	13.73	
	D. 1/52	21.27	13.95	88.5	2.97	73.70	D. 1/52	13.48	
	Mean:				4.03	100.00			
	Significant Difference, 20:1:				.85	21.09			
	Sophia, Field 5 East "A". Reaped 19.8.57 at 11.75 months. Rainfall:—81.35 inches.								
MEANS OF 3 PLOTS:	D. 44/52	33.83	16.55	90.7	5.60	130.84	D. 44/52	20.61	106
	D. 40/52	33.03	15.99	90.7	5.28	123.36	D. 40/52	18.99	
	*B. 41227	37.37	13.93	90.5	5.21	121.73	D. 11/52	18.59	
	D. 34/52	37.58	13.59	87.1	5.11	119.39	D. 49/52	17.52	
	D. 49/52	34.03	14.42	89.8	4.91	114.72	D. 34/52	17.50	
	D. 11/52	32.51	14.46	90.6	4.70	109.81	*B. 41227	17.38	
	D. 17/52	31.00	14.93	89.0	4.63	108.18	D. 19/52	17.20	
	D. 29/52	33.90	13.59	88.0	4.61	107.71	D. 57/52	16.52	
	D. 57/52	30.41	15.08	89.7	4.59	107.24	D. 45/52	16.50	
	D. 54/52	35.99	12.44	85.7	4.48	104.67	D. 55/52	16.33	
	D. 19/52	33.90	13.08	87.0	4.43	103.50	D. 54/52	16.25	
	D. 45/52	31.47	14.06	88.0	4.42	103.27	D. 56/52	15.80	
	D. 55/52	28.16	14.98	89.0	4.22	98.60	D. 17/52	15.66	
	D. 46/52	28.04	14.87	90.7	4.17	97.43	D. 46/52	15.44	
	D. 15/52	33.11	12.59	87.0	4.17	97.43	D. 38/52	15.38	
	D. 39/52	29.12	14.26	87.2	4.15	96.96	D. 39/52	15.09	
	D. 56/52	28.90	14.30	88.1	4.13	96.50	D. 43/52	14.55	
	D. 20/52	29.41	13.58	88.3	3.99	93.22	D. 15/52	14.26	
	D. 43/52	27.23	14.50	90.1	3.95	92.29	D. 20/52	14.08	
	D. 38/52	28.75	13.51	89.3	3.89	90.89	D. 25/52	13.91	
	D. 36/52	24.46	15.07	88.9	3.68	85.98	D. 36/52	13.79	
	D. 25/52	27.82	13.08	86.5	3.64	85.05	D. 29/52	13.26	
	D. 52/52	24.96	14.47	89.5	3.61	84.35	D. 37/52	12.79	
	D. 50/52	21.57	14.51	90.7	3.13	73.13	D. 52/52	12.43	
	D. 37/52	15.69	14.17	87.6	2.23	52.10	D. 50/52	11.54	
	Mean:				4.28	100.00			
	Significant Difference: 20:1:				1.08	25.23			

*** Standard Cane.**

TABLE I (Contd.)—Results of a First Ratoon "Variety Sorting" Trial on Pegassy Clay.

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Combined results for 2 Crops, Plants and 1st Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre, Tons.	
	Pln. Uitvlugt, Field 89 M.Z.E. Reaped 19.9.57 at 13.00 months. Rainfall:—104.99 inches.								
MEANS OF 4 PLOTS:	B. 49119	57.78	13.86	86.6	8.01	144.32	*B. 41227	16.48	135
	*B. 41227	53.82	14.20	86.6	7.64	137.66	B. 49119	16.38	
	B. 51131	50.93	14.03	85.1	7.14	128.65	B. 51353	15.08	
	B. 51353	49.76	13.99	84.4	6.66	120.00	B. 51131	15.08	
	B. 51311	46.98	14.17	86.5	6.66	120.00	B. 51355	14.86	
	B. 51355	57.74	11.35	76.8	6.55	118.02	B. 51116	14.76	
	B. 51183	53.53	12.07	81.9	6.46	116.40	B. 51183	14.42	
	B. 51116	46.29	13.65	85.5	6.32	113.87	B. 5178	14.26	
	B. 51259	44.05	13.72	81.8	6.04	108.83	B. 51134	14.08	
	B. 51129	43.08	13.98	85.3	6.02	108.47	B. 51311	13.79	
	B. 51134	49.47	12.16	79.0	6.01	108.29	B. 51259	13.16	
	B. 5124	44.28	12.94	83.7	5.73	103.24	B. 51129	13.14	
	B. 5178	48.44	11.47	77.8	5.56	100.18	B. 5121	13.01	
	B. 51105	38.76	13.63	86.3	5.28	95.14	B. 5124	12.63	
	B. 5121	40.55	12.74	84.7	5.16	92.97	B. 51190	11.50	
	B. 51190	39.59	12.95	85.1	5.13	92.43	B. 51105	11.02	
	B. 49311	38.42	12.59	85.4	4.84	87.21	B. 51211	10.99	
	B. 51192	40.66	11.66	83.0	4.74	85.41	B. 51192	10.63	
	B. 5192	34.04	13.51	86.8	4.60	82.88	B. 51168	10.62	
	B. 51168	34.69	12.79	84.8	4.57	82.34	B. 49311	10.30	
	B. 51211	39.71	10.96	80.4	4.35	78.38	B. 5192	10.08	
	B. 51156	35.76	11.84	78.6	4.23	76.22	B. 51167	9.93	
	B. 51167	33.36	11.76	81.8	3.92	70.63	B. 51321	9.36	
	B. 51321	30.14	12.49	84.2	3.76	67.75	B. 51156	9.03	
	B. 5143	29.21	11.90	83.7	3.48	62.70	B. 5143	9.02	
	Mean:				5.55	100.00			
	Significant Difference, 20:1:				1.07	19.28			

* Standard Cane.

TABLE I. (Contd.)—Results of a Second Ratoon "Variety Sorting" Trial on Pegassy Clay.

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre		Combined Results for 3 Crops, Plants, 1st and 2nd Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre, Tons.	
	Pln. De Kinderen, Field W. 78. Reaped 4.4.57 at 11.50 months. Rainfall:—127.75 inches.								
MEANS OF 4 PLOTS:	B. 49119	33.76	15.80	89.0	5.33	133.58	*B. 41227	16.76	107
	B. 50135	31.83	15.29	87.8	4.86	121.80	B. 49119	15.88	
	B. 50267	30.97	15.00	88.5	4.64	116.29	B. 50267	14.92	
	B. 50352	30.59	14.78	87.4	4.52	113.28	B. 50135	13.89	
	***B. 41227**	**28.61**	**15.74**	**88.7**	**4.50**	**112.78**	B. 50126	13.72	
	B. 50126	24.70	17.74	92.7	4.38	109.77	B. 50352	13.45	
	B. 50345	23.67	18.01	93.2	4.26	106.77	B. 50166	12.88	
	B. 50210	27.97	15.22	87.7	4.26	106.77	B. 50345	12.56	
	B. 5098	25.45	16.35	90.3	4.16	104.26	B. 50311	12.53	
	B. 50347	26.47	15.39	89.6	4.07	102.00	B. 50268	12.51	
	B. 50141	26.55	15.17	85.2	4.03	101.00	B. 50210	12.31	
	B. 5037	23.14	16.66	90.9	3.85	96.49	B. 5037	12.22	
	B. 50311	25.00	14.95	85.6	3.74	93.73	B. 50347	12.19	
	B. 5047	24.22	15.40	88.6	3.73	93.48	B. 50115	12.08	
	B. 50155	22.77	15.75	89.7	3.58	89.72	B. 50155	12.04	
	B. 50166	20.84	15.80	89.0	3.29	82.46	B. 5047	11.93	
	B. 50115	23.97	13.52	87.0	3.24	81.20	B. 5098	11.48	
	B. 50377	19.92	16.13	90.2	3.21	80.45	B. 50141	10.89	
	B. 50268	20.51	15.01	89.3	3.08	77.19	B. 50377	10.32	
	B. 50370	20.13	14.91	88.3	3.00	75.19	B. 50370	10.31	
	Mean:				3.99	100.00			
	Significant Difference, 20 : 1 :				.93	23.31			

*** Standard Cane.**

B. PLANT CANE VARIETY TRIALS.

Twenty-nine (29) Variety Trials were reaped as Plants during 1957, the results of which are presented in Table II. These experiments are classified according to soil type and locality as follows:—

Soil Type and Locality.	Index Nos. of Trials.	No. of Trials.
Clays—Demerara.	162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177.	16
Clays—Berbice.	178, 179, 180, 181, 182, 183, 184, 185, 186.	9
Riverside Clay.	187, 188, 189.	3
Pegassy Clay.	190.	1

TABLE II.— **Results of Plant Cane Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Trial No.
					Tons.	% Mean.	
	Sophia, Field 11 West "A". Reaped 15.2.57 at 14.25 months. Rainfall:—134.74 inches.						
MEANS OF 5 PLOTS:	B. 49119	67.05	11.62	82.5	7.79	114.90	162
	*B. 41227	62.43	12.29	83.7	7.67	113.13	
	B. 47419	61.33	12.24	83.3	7.51	110.77	
	B. 50275	61.24	11.57	81.7	7.08	104.42	
	B. 49353	55.17	12.73	87.6	7.02	103.54	
	Pindar	52.03	13.23	86.1	6.88	101.47	
	B. 50267	59.36	10.90	80.1	6.47	95.43	
	B. 46288	55.28	11.49	82.7	6.35	93.66	
	B. 50141	53.31	11.59	80.5	6.18	91.15	
	B. 5098	59.59	10.37	79.6	6.18	91.15	
	B. 50347	56.58	9.72	74.5	5.50	81.12	
	Mean:				6.78	100.00	
	Significant Difference, 20:1:				.80	11.80	
	Sophia, Field 11 West "B". Reaped 18.2.57 at 14.25 months. Rainfall:—138.34 inches.						
MEANS OF 5 PLOTS:	B. 49119	67.33	14.46	88.2	9.74	134.34	163
	B. 51131	62.65	14.84	88.9	9.30	128.28	
	B. 47419	69.01	13.09	84.7	9.03	124.55	
	B. 49311	55.39	13.88	86.8	7.69	106.07	
	B. 51116	60.75	12.59	82.4	7.65	105.52	
	B. 51353	67.08	10.97	79.1	7.36	101.52	
	B. 51211	63.44	11.55	81.7	7.33	101.10	
	B. 5124	55.16	13.10	84.3	7.22	99.59	
	*B. 41227	57.92	12.15	83.0	7.04	97.10	
	B. 5121	63.62	10.84	77.6	6.90	95.17	
	B. 51105	52.86	12.97	83.7	6.86	94.62	
	B. 51183	56.93	11.85	79.9	6.75	93.10	
	Pindar	50.89	13.14	84.9	6.69	92.28	
	B. 46288	54.36	11.76	82.6	6.39	88.14	
	B. 51321	53.82	11.21	78.6	6.03	83.17	
	B. 51355	63.85	9.36	74.2	5.79	79.86	
	B. 5143	48.09	11.34	80.4	5.45	75.17	
	Mean:				7.25	100.00	
	Significant Difference, 20:1:				1.58	21.79	

* **Standard Cane.**

TABLE II.—(Contd.)—Results of Plant Cane Variety Trials on Demerara Frontland Clay.

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Trial No.
	Sophia Field 1 West "B". Reaped 4.3.57 at 13.75 months. Rainfall:—129.12 inches.						
MEANS OF 5 PLOTS:	*B. 41227	50.25	14.30	88.3	7.19	113.59	164
	B. 52178	49.37	14.08	86.7	6.95	109.79	
	B. 49311	41.73	15.90	90.4	6.63	104.74	
	B. 49198	49.33	13.37	83.4	6.60	104.27	
	Co. 413	46.79	13.30	85.8	6.22	98.26	
	B. 51190	41.78	14.53	85.3	6.07	95.89	
	N.C.O. 330	42.52	13.40	86.4	5.70	90.05	
	Trojan	36.80	14.34	87.1	5.28	83.41	
	Mean:				6.33	100.00	
	Significant Difference, 20:1:				1.10	17.38	
	Sophia Field 1¼ West "A". Reaped 13.3.57 at 13.25 months. Rainfall:—119.19 inches.						
MEANS OF 5 PLOTS:	*B. 41227	58.16	14.29	86.7	8.31	142.29	165
	B. 34104	57.55	13.32	85.9	7.67	131.34	
	Co. 421	44.94	12.17	80.9	5.47	93.66	
	P.O.J. 2878	40.19	13.14	84.3	5.28	90.41	
	Diamond 10	39.70	12.21	83.0	4.85	83.05	
	D. 625	41.53	8.40	66.3	3.49	59.76	
	Mean:				5.84	100.00	
	Significant Difference, 20:1:				1.24	21.23	
	Sophia, Field 1¼ West "B". Reaped 13.3.57 at 13.00 months. Rainfall:—119.14 inches.						
MEANS OF 5 PLOTS:	*B. 41227	53.83	13.85	86.5	7.45	118.63	166
	B. 49198	54.03	12.00	78.4	6.48	103.18	
	B. 50115	51.51	12.46	85.0	6.42	102.23	
	B. 49353	45.86	13.81	88.1	6.33	100.80	
	Pepecuca	40.92	13.86	87.1	5.67	90.29	
	D. 142/45	44.75	11.87	81.9	5.31	84.55	
	Mean:				6.28	100.00	
	Significant Difference, 20:1:				.68	10.83	

* Standard Cane.

TABLE II.—(Contd.)—Results of Plant Cane Variety Trials on Demerara Frontland Clay.

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Trial No.
	Sophia, Field 9 East "A". Reaped 4.4.57 at 11.25 months. Rainfall:—108.97 inches.						
MEANS OF 5 PLOTS:	*B. 41227	46.27	14.41	86.1	6.67	141.31	167
	B. 34104	44.85	13.76	86.7	6.17	122.18	
	P.O.J. 2878	35.16	14.78	87.0	5.20	110.17	
	Diamond 10	28.81	15.39	87.6	4.44	94.07	
	D. 625	33.00	12.30	78.5	4.06	86.02	
	Co. 421	30.03	12.59	82.5	3.78	80.08	
	Mean:				5.05	100.00	
	Significant Difference, 20:1:				.65	12.87	
	Sophia, Field 15 East "A". Reaped 23.8.57 at 14.75 months. Rainfall:—124.51 inches.						
MEANS OF 5 PLOTS:	B. 52315	60.01	14.36	88.5	8.62	119.39	168
	*B. 41227	56.04	14.73	89.6	8.26	114.40	
	B. 52257	57.19	13.99	88.3	8.00	110.80	
	B. 52107	56.27	13.92	89.1	7.83	108.45	
	B. 52162	54.59	12.20	86.3	6.66	92.24	
	B. 52253	45.93	13.15	86.7	6.04	83.66	
	B. 52184	36.62	13.93	88.8	5.10	70.64	
	Mean:				7.22	100.00	
	Significant Difference, 20:1:				.90	12.47	
	Sophia, Field 15 East "B". Reaped 23.8.57 at 14.75 months. Rainfall:—124.51 inches.						
MEANS OF 5 PLOTS:	B. 5212	55.83	14.06	89.7	7.85	111.51	169
	B. 52222	56.91	13.05	87.3	7.43	105.54	
	B. 5277	56.19	13.21	87.2	7.42	105.40	
	*B. 41227	53.73	13.37	89.1	7.18	101.99	
	B. 52306	57.39	12.33	84.0	7.07	100.43	
	B. 52158	54.02	12.10	84.9	6.54	92.90	
	B. 52135	50.24	11.51	82.2	5.78	82.10	
	Mean:				7.04	100.00	
	Significant Difference, 20:1:				.76	10.80	
	Sophia, Field 15 East "C". Reaped 23.8.57 at 14.75 months. Rainfall:—124.51 inches.						
MEANS OF 5 PLOTS:	*B. 41227	53.76	13.85	88.3	7.44	114.11	170
	B. 52144	54.09	13.13	86.7	7.10	108.90	
	B. 52214	50.78	13.21	87.3	6.71	102.91	
	B. 52389	47.53	13.60	86.9	6.46	99.08	
	H. 39-3633	48.04	12.91	87.1	6.20	95.09	
	B. 52256	49.02	12.02	83.1	5.89	90.34	
	B. 5235	47.23	12.31	85.9	5.81	89.11	
	Mean:				6.52	100.00	
	Significant Difference, 20:1:				—	—	

* Standard Cane.

TABLE II. (Contd.)—**Results of Plant Cane Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Trial No.
	Sophia, Field 17 East. Reaped 8.10.57 at 12.25 months. Rainfall:—69.22 inches.						
MEANS OF 4 PLOTS:	*B. 41227	53.07	14.99	85.9	7.95	113.57	171
	D. 40/52	47.96	16.29	88.7	7.81	110.57	
	Trojan	46.86	16.35	87.8	7.66	109.43	
	D. 11/52	49.27	15.24	86.7	7.51	107.29	
	D. 16/52	49.38	14.66	86.8	7.24	103.43	
	D. 30/52	42.32	16.06	89.0	6.80	97.14	
	D. 18/52	45.18	15.00	85.9	6.78	96.86	
	D. 13/52	50.15	13.15	83.5	6.59	94.14	
	D. 57/52	40.03	14.87	85.6	5.95	85.00	
	D. 27/52	48.50	11.76	79.4	5.70	81.43	
	Mean:				7.00	100.00	
	Significant Difference, 20:1:				—	—	

Results of Plant Cane Variety Cultivation Trials on Demerara Frontland Clay.

"Standard Estate" System.

Sophia, Field 3 East "B". Reaped 18.10.57 at 12.00 months. Rainfall:—68.56 inches.

MEANS OF 4 PLOTS:	B. 4098	58.12	13.18	84.6	7.66	129.39	172
	D. 158/41	54.07	12.38	82.7	6.69	113.01	
	B. 47258	49.15	13.15	82.9	6.46	109.12	
	D. 62/43	48.27	12.01	81.1	5.79	97.80	
	B. 34104	42.06	12.81	86.2	5.39	91.05	
	*B. 41227	38.40	13.94	86.2	5.35	90.37	
	B. 37161	34.60	11.80	83.0	4.08	68.92	
	Mean:				5.92	100.00	
	Significant Difference, 20:1:				1.43	24.16	

"Cameron-Williams" System.

Sophia, Field 3 East "A". Reaped 22.10.57 at 12.25 months. Rainfall:—68.57 inches.

MEANS OF 4 PLOTS:	B. 47258	59.00	14.82	87.0	8.74	119.89	173
	B. 4098	59.00	13.81	85.3	8.15	111.80	
	B. 34104	54.49	13.46	87.4	7.33	100.55	
	D.62/43	51.60	14.06	84.8	7.26	99.59	
	D. 158/41	57.00	12.64	83.0	7.20	98.77	
	*B. 41227	50.32	14.21	87.1	7.15	98.08	
	B. 37161	42.25	12.27	84.4	5.18	71.06	
	Mean:				7.29	100.00	
	Significant Difference, 20:1:				.95	13.03	

*** Standard Cane.**

TABLE II. (Contd.).—Results of Plant Cane Variety Trials on Demerara Frontland Clay.

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Trial No.
	Pln. Farm, Field A. 19. Reaped 27.3.57 at 13.50 months. Rainfall:—121.81 inches.						
MEANS OF 5 PLOTS.	***B. 41227**	**31.57**	**15.71**	**91.1**	**4.96**	**122.77**	174
	B. 43413	34.36	14.40	85.5	4.95	122.52	
	Pindar	29.05	15.72	90.3	4.57	113.12	
	B. 47258	29.85	15.26	88.7	4.56	112.87	
	Co. 413	29.82	14.73	90.0	4.39	108.66	
	B. 4214	27.36	15.03	90.7	4.11	101.73	
	N.C.O. 330	22.08	14.64	88.3	3.23	79.95	
	Pepecuca	21.42	14.24	88.2	3.05	75.49	
	Trojan	17.84	14.00	86.2	2.50	61.88	
	Mean:				4.04	100.00	
	Significant Difference, 20:1:				.95	23.51	
	Pln. L.B.I., Field 55. Reaped 14.3.57 at 13.00 months. Rainfall:—114.40 inches.						
MEANS OF 5 PLOTS:	***B. 41227**	**56.12**	**14.91**	**88.4**	**8.37**	**139.50**	175
	B. 4214	47.35	13.83	87.9	6.58	109.67	
	B. 50115	50.65	12.04	81.8	6.10	101.67	
	D. 106/46	43.31	13.14	84.5	5.69	94.83	
	Pepecuca	39.02	14.28	87.6	5.57	92.83	
	N.C.O. 330	37.45	14.59	88.2	5.46	91.00	
	Co. 413	37.57	14.09	87.4	5.29	88.17	
	D. 133/46	37.57	13.10	83.2	4.92	82.00	
	Mean:				6.00	100.00	
	Significant Difference, 20:1:				.78	13.00	
	Pln. Lusignan, Field 6 M.X.E. Reaped 15.10.57 at 10.00 months. Rainfall:—48.12 inches.						
MEANS OF 5 PLOTS:	***B. 41227**	**34.15**	**13.21**	**84.0**	**4.51**	**113.03**	176
	B. 50135	35.64	12.32	81.8	4.39	110.02	
	B. 51134	31.59	13.78	83.9	4.35	109.02	
	B. 50267	35.95	11.99	80.9	4.31	108.02	
	B. 50112	33.19	12.33	82.2	4.09	102.51	
	B. 50210	33.18	11.56	77.3	3.83	95.99	
	B. 5178	36.42	9.84	71.9	3.58	89.72	
	Q. 28	21.04	13.71	83.0	2.89	72.43	
	Mean:				3.99	100.00	
	Significant Difference, 20:1:				.41	10.28	
	Pln. Lusignan, Field G.H. 26 B. Reaped 24.10.57 at 11.25 months. Rainfall:—75.63 inches.						
MEANS OF 5 PLOTS:	N.C.O. 330	43.55	14.64	79.8	6.38	116.85	177
	N.C.O. 300	38.90	15.31	83.8	5.95	108.97	
	***B. 41227**	**43.85**	**13.39**	**76.5**	**5.88**	**107.69**	
	Co. 413	48.66	11.93	79.1	5.80	106.23	
	Q. 28	34.07	15.19	81.0	5.17	94.69	
	H. 39-7028	38.05	13.25	79.8	5.04	92.31	
	Trojan	42.73	11.57	67.5	4.94	90.48	
	Pepecuca	29.38	15.50	82.6	4.55	83.33	
	Mean:				5.46	100.00	
	Significant Difference, 20: 1:				.64	11.72	

TABLE II. (Contd.)—Results of Plant Cane Variety Trials on Berbice Frontland Clay.

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Trial No.
					Tons.	% Mean.	
	Pln. Albion, Field N. 63 W.S. "B". Reaped 5.2.57 at 15.25 months. Rainfall:—155.01 inches.						
MEANS OF 5 PLOTS:	N.C.O. 310	53.95	16.00	87.6	8.63	112.96	178
	D. 141/46	55.78	15 40	89.0	8.59	112.43	
	B. 47258	51.10	16.06	90.6	8.21	107.46	
	B. 50135	54.86	14.44	87.5	7.92	103.66	
	D. 133/46	51.10	14.77	87.6	7.55	98.82	
	***B. 41227**	**53.06**	**13.86**	**85.1**	**7.36**	**96.33**	
	B. 45137	51.07	13.62	84.9	6.96	91.10	
	H. 37-1933	47.78	12.33	82.7	5.89	77.09	
	Mean:				7.64	100.00	
	Significant Difference, 20 : 1:				1.59	20.81	
	Pln. Albion, Field Chesney 18. Reaped 15.8.57 at 13.25 months. Rainfall:—94.51 inches.						
MEANS OF 5 PLOTS:	B. 50275	48.84	12.54	84.2	6.12	110.86	179
	D. 184/46	39.57	14.94	87.5	5.91	107.07	
	B. 50347	43.07	13.21	84.5	5.69	103.08	
	B. 49119	38.02	14.84	86.2	5.64	102.17	
	***B. 41227**	**39.13**	**13.82**	**85.5**	**5.41**	**98.01**	
	B. 50210	38.92	13.50	83.0	5.26	95.29	
	B. 50155	41.84	12.44	82.9	5.21	94.38	
	Pindar	33.29	14.71	86.8	4.90	88.77	
	Mean:				5.52	100.00	
	Significant Difference, 20 : 1:				—	—	
	Pln. Bath, Field 22 Waterloo. Reaped 5.12.57 at 11.50 months. Rainfall:—76.72 inches.						
MEANS OF 5 PLOTS:	B. 49119	42.61	12.86	83.3	5.48	123.42	180
	***B. 41227**	**39.14**	**13.08**	**82.5**	**5.12**	**115.32**	
	Co. 413	40.11	12.55	84.1	5.03	113.29	
	N.C.O. 330	36.95	13.62	85.3	5.03	113.29	
	B. 50210	35.28	11.70	77.9	4.13	93.02	
	B. 5011	32.27	12.33	79.7	3.98	89.64	
	Pepecuca	26.51	14.22	88.3	3.77	84.91	
	O 28	24.10	12.48	79.2	3.01	67.79	
	Mean:				4.44	9.68	
	Significant Difference, 20 : 1:				.43	100.00	

* Standard Cane.

TABLE II.— **Results of Plant Cane Variety Trials on Berbice Frontland Clay.**

	Variety.	Cane per Acre. Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Trial No.
Pln. Port Mourant, Field P.M.E. 1. Reaped 22.12.56 at 16.00 months. Rainfall:—137.57 inches.							
MEANS OF 3 PLOTS:	*B. 41227	71.27	12.34	83.8	8.80	109.45	181
	B. 37161	67.37	12.63	85.2	8.51	105.85	
	B. 47225	65.56	12.79	84.7	8.39	104.35	
	Trojan	57.22	14.10	86.3	8.07	100.37	
	H. 37-1933	64.43	11.97	83.0	7.71	95.90	
	Pindar	58.51	11.56	82.0	6.77	84.20	
	Mean:				8.04	100.00	
	Significant Difference, 20 : 1 :				1.07	13.31	
Pln. Port Mourant, Field John's E. 26. Reaped 5.2.57 at 14.25 months. Rainfall:—136.01 inches.							
MEANS OF 4 PLOTS.	*B. 41227	55.84	12.04	83.3	6.72	108.91	182
	B. 47258	55.00	12.13	84.3	6.70	108.59	
	B. 47379	56.57	11.40	86.0	6.45	104.54	
	B. 37161	54.52	11.42	82.7	6.23	100.97	
	B. 47225	46.90	12.62	84.7	5.92	95.95	
	Pindar	48.42	10.32	79.6	5.00	81.04	
	Mean:				6.17	100.00	
	Significant Difference, 20 : 1 :				.57	9.24	
Pln. Port Mourant, Field A.E.W. 2. Reaped 16.3.57 at 13.25 months. Rainfall:—86.30 inches.							
MEANS OF 4 PLOTS:	B. 45151	51.87	13.53	83.8	7.02	131.71	183
	*B. 41227	47.52	12.55	81.4	5.96	111.82	
	B. 37161	49.80	11.89	81.6	5.92	111.07	
	Pindar	40.60	12.55	79.5	5.10	95.68	
	H. 32-1063	41.77	11.56	79.0	4.82	90.43	
	B. 4373	43.07	10.99	76.5	4.73	88.74	
	B. 47379	43.20	10.50	75.1	4.54	85.18	
	Trojan	40.00	11.32	78.5	4.52	84.80	
	Mean:				5.33	100.00	
	Significant Difference, 20 : 1 :				.59	11.07	

* **Standard Cane.**

These Experiments were laid down and reaped by Bookers Sugar Estates, Ltd.

TABLE II. (Contd.)—Results of Plant Cane Variety Trials on Berbice Frontland Clay.

	Variety.	Cane per Acre. Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Trial No.
†*Plm. Port Mourant, Field T.L.O.G. 24. Reaped 24.4.57 at 13.50 months. Rainfall:—85.37 inches.*							
MEANS OF 4 PLOTS:	*B. 41227	49.12	14.27	84.1	7.01	109.53	184
	B. 45137	50.17	13.94	83.7	6.99	109.22	
	B. 47258	46.57	14.76	86.4	6.87	107.34	
	B. 37161	47.72	13.94	84.3	6.65	103.91	
	B. 47225	44.47	14.10	84.7	6.27	97.97	
	Pindar	40.52	13.94	84.6	5.65	88.28	
	B. 4373	41.72	12.79	80.7	5.34	83.44	
	Mean:				6.40	100.00	
	Significant Difference, 20:1:				1.10	17.19	
Plm. Port Mourant, Field W.O.G. 16. Reaped 20.8.57 at 13.00 months. Rainfall:—63.11 inches.							
MEANS OF 5 PLOTS:	D. 184/46	52.27	14.93	87.2	7.80	126.01	185
	B. 50275	59.55	11.25	81.4	6.70	108.24	
	B. 49119	50.23	12.86	83.0	6.46	104.36	
	B. 50347	53.23	11.63	84.4	6.22	100.48	
	Pindar	43.31	13.83	85.5	5.99	96.77	
	*B. 41227	42.44	13.98	85.8	5.93	95.80	
	B. 50210	46.35	11.38	79.8	5.27	85.14	
	B. 50155	49.21	10.47	74.7	5.15	83.20	
	Mean:				6.19	100.00	
	Significant Difference, 20:1:				.98	15.83	
Plm. Rose Hall, Field 63 Lot 20 Reaped 6.3.57 at 11.50 months. Rainfall:—97.72 inches.							
MEANS OF 5 PLOTS:	B. 51355	55.45	13.88	83.7	7.70	131.62	186
	*B. 41227	46.32	14.79	87.1	6.85	117.09	
	B. 51129	39.86	15.43	89.1	6.15	105.13	
	Trojan	39.04	15.22	87.1	5.94	101.54	
	N.C.O. 330	38.99	15.21	89.1	5.93	101.37	
	B. 5121	41.20	13.64	85.3	5.62	96.07	
	B. 51156	35.58	13.42	83.1	4.78	81.71	
	Q. 28	30.95	12.31	81.1	3.81	65.13	
	Mean:				5.85	100.00	
	Significant Difference, 20:1:				.64	10.94	

* Standard Cane.

† This Experiment was laid down and reaped by Bookers Sugar Estates, Ltd.

TABLE II. (Contd.) Results of Plant Cane Variety Trials on Riverside Clay.

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Trial No.
Pln. Farm, Field L.D. 25/27. Reaped 10.4.57 at 11.75 months. Rainfall:—112.10 inches.							
MEANS OF 5 PLOTS:	*B. 41227	37.22	15.10	88.2	5.62	125.73	187
	B. 50115	37.13	12.70	85.3	4.72	105.59	
	B. 5121	32.99	13.90	86.0	4.58	102.46	
	B. 51190	34.96	12.56	78.7	4.39	98.21	
	B. 51259	30.68	13.99	87.1	4.29	95.97	
	B. 51129	30.31	14.11	86.6	4.28	95.74	
	B. 51355	39.88	10.75	76.6	4.28	95.74	
	N.C.O. 300	24.55	14.73	88.2	3.62	80.98	
	Mean				4.47	100.00	
	Significant Difference, 20 : 1 :				.84	18.79	
Pln. Versailles, Field V. 5. Reaped 25.4.57 at 12.00 months. Rainfall:—116.07 inches.							
MEANS OF 5 PLOTS:	*B. 41227	40.74	16.74	88.2	6.82	129.90	188
	H. 38-2915	42.27	14.50	87.2	6.13	116.76	
	B. 51190	36.43	16.40	87.9	5.97	113.71	
	B. 45270	33.62	16.06	87.7	5.40	102.86	
	N.C.O 300	28.93	16.32	88.7	4.72	89.90	
	P.R. 1000	26.85	16.18	89.5	4.34	82.67	
	B. 51259	27.34	15.79	90.6	4.32	82.29	
	H. 37-1933	29.09	14.72	85.2	4.28	81.52	
	Mean				5.25	100.00	
	Significant Difference, 20 : 1 :				.46	8.76	
Pln. Wales, Field V La F.A. 5 E. Reaped 12.11.57 at 12.50 months. Rainfall:—83.85 inches.							
MEANS OF 5 PLOTS:	*B. 41227	31.37	17.34	89.4	5.44	134.99	189
	B. 51134	27.71	15.97	86.2	4.43	109.93	
	B. 51311	25.30	16.31	87.0	4.21	104.47	
	B. 51116	26.42	15.92	89.4	4.21	104.47	
	B. 51183	28.58	13.33	78.7	3.81	94.54	
	B. 5178	27.82	13.44	78.5	3.74	92.80	
	B. 51353	24.63	13.17	80.9	3.24	80.40	
	B. 5192	19.89	16.09	89.5	3.19	79.16	
	Mean :				4.03	100.00	
	Significant Difference, 20 : 1 :				.58	14.39	

*Standard Cane.

TABLE II. (Contd.).— **Results of a Plant Cane Variety Trial on Pegassy Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Trial No.
Pln. Leonora, Field Stewartville "A". Reaped 28.2.57 at 14.50 months. Rainfall :—172.56 inches.							
MEANS OF 5 PLOTS:	*B. 41227	53.07	14.24	85.9	7.56	117.57	190
	D. 133/46	52.65	13.64	87.1	7.18	111.66	
	B. 49119	49.49	13.66	87.6	6.76	105.13	
	B. 5037	44.57	14.65	89.7	6.53	101.56	
	Pindar	43.51	14.86	88.5	6.47	100.62	
	B. 49122	45.10	13.86	89.5	6.25	97.20	
	B. 49354	38.85	14.73	88.2	5.72	88.96	
	B. 49377	38.16	12.97	82.4	4.95	76.98	
	Mean :				6.43	100.00	
	Significant Difference, 20 : 1 :				1.42	22.08	

Standard Cane.

C. FIRST RATOON VARIETY TRIALS.

Twenty-three (23) Variety Trials were reaped as First Ratoons during 1957. The results of these trials are presented in Table III.

The classification of the First Ratoon Variety Trials according to soil type and locality is as follows :—

Soil Type and Locality.	Index Nos. of Trials.	No. of Trials.
Clays—Demerara.	136, 137, 138, 139, 140, 141, 142, 143, 144, 145.	10
Clays—Berbice.	146, 147, 154, 155, 178, 181, 182.	7
Riverside Clay.	153.	1
Pegassy Clay.	148, 149, 150, 151, 152.	5

TABLE III.—Results of First Ratoon Variety Trials on Demerara Frontland Clay.

	Variety.	Cane per Acre, Tons.	Pol. % Cane	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Combined results for 2 Crops, Plants and 1st Ratoons: Variety.	Combined results for 2 Crops, Plants and 1st Ratoons: Sucrose in Cane per Acre, Tons.	Trial No
Sophia, Field 13 West "C". Reaped 28.3.57 at 10.75 months. Rainfall:—103.61 inches.									
MEANS OF 5 PLOTS:	*B. 41227	38.43	14.89	88.2	4.58	139.63	*B. 41227	13.51	136
	D.M. 53/53	20.42	13.29	81.6	2.71	82.62	D.M. 53/53	9.74	
	D.M. 54/53	18.67	13.67	84.6	2.55	77.74	D.M. 54/53	7.14	
	Mean:				3.28	100.00			
	Significant Difference, 20:1:				1.14	34.76			
Sophia, Field 16 West "C". Reaped 29.8.57 at 12.50 months. Rainfall:—90.24 inches.									
MEANS OF 5 PLOTS:	*B. 41227	31.04	14.86	87.4	4.61	117.60	*B. 41227	11.35	137
	D. 106/46	29.22	14.53	87.4	4.25	108.42	D. 106/46	10.30	
	D. 133/46	26.81	13.09	84.2	3.51	89.54	D. 259/46	10.04	
	D. 259/46	22.41	14.73	88.8	3.30	84.18	D. 133/46	9.53	
	Mean:				3.92	100.00			
	Significant Difference, 20:1:				—	—			
Sophia, Field 8 West "B". Reaped 7.9.57 at 11.75 months. Rainfall:—76.74 inches.									
MEANS OF 5 PLOTS:	B. 5121	45.73	15.41	90.0	7.05	154.27	B. 5121	15.44	138
	B. 51131	43.74	15.98	90.8	6.99	152.95	B. 51131	13.87	
	B. 5098	41.34	14.92	88.4	6.17	135.01	B. 5098	13.36	
	*B. 41227	41.13	14.35	86.9	5.90	129.10	*B. 41227	12.91	
	D. 94/45	38.08	15.14	90.5	5.76	126.04	D. 94/45	12.34	
	B. 50155	43.22	12.05	84.2	5.23	114.44	B. 50155	11.71	
	B. 4995	35.09	14.69	90.4	5.15	112.69	B. 4995	10.78	
	B. 46288	35.58	14.33	89.2	5.10	111.60	B. 46288	10.77	
	D. 127/45	37.25	13.43	84.1	5.00	109.41	B. 4764	10.79	
	B. 4764	31.36	15.31	88.0	4.80	105.03	B. 51355	10.61	
	B. 51105	30.54	15.51	88.0	4.73	103.50	B. 51105	10.48	
	M. 134/32	32.75	13.88	86.8	4.55	95.56	D. 127/45	10.46	
	D. 6/52	27.58	15.54	88.2	4.28	93.65	B. 51190	10.11	
	B. 51355	29.68	13.53	86.2	4.02	87.96	D. 6/52	10.06	
	B. 47399	26.19	14.44	88.8	3.78	82.71	M. 134/32	9.88	
	B. 51190	21.32	15.34	87.4	3.27	71.55	B. 47399	8.84	
	B. 51156	21.70	14.05	85.8	3.05	66.74	B. 51167	7.08	
	B. 5192	15.07	15.05	88.2	2.27	49.67	B. 51259	6.86	
	B. 51259	14.40	15.18	84.8	2.19	47.92	B. 51156	6.59	
	B. 51167	14.00	14.80	89.4	2.07	45.30	B. 5192	6.07	
	Mean:				4.57	100.00			
	Significant Difference, 20:1:				.85	18.60			

*** Standard Cane.**

TABLE III. (Contd.) Results of First Ratoon Variety Trials on Demerara Frontland Clay.

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Combined results for 2 Crops, Plants and 1st Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre, Tons.	
	Sophia, Field 8 East "B". Reaped 1.11.57 at 11.25 months- Rainfall:—65.72 inches-								
MEANS OF 5 PLOTS:	*B. 41227	36.98	15.84	90.9	5.86	153.40	*B. 41227	13.83	139
	D. 2/46	33.03	17.41	92.2	5.75	150.32	D. 2/46	12.67	
	D. 57/52	31.41	15.27	90.2	4.80	125.65	D. 57/52	11.02	
	D. 11/52	27.09	15.21	89.2	4.12	107.85	D. 11/52	10.73	
	D. 36/52	25.75	14.94	89.0	3.85	100.79	D. 30/52	10.69	
	D. 47/52	23.54	16.22	91.4	3.82	100.00	D. 35/52	10.45	
	D. 35/52	24.53	15.13	91.6	3.71	97.12	D. 47/52	10.17	
	D. 49/52	23.19	15.41	91.1	3.57	93.46	D. 4/52	9.94	
	D. 4/52	22.63	15.57	91.2	3.53	92.41	D. 36/52	9.80	
	D. 30/52	22.68	14.96	91.3	3.39	88.74	D. 40/52	9.71	
	D. 17/52	21.78	14.72	90.9	3.20	83.77	D. 49/52	9.45	
	D. 40/52	19.72	15.71	92.1	3.10	81.15	D. 17/52	9.14	
	D. 19/52	22.26	13.65	88.0	3.04	79.58	D. 19/52	8.90	
	D. 6/52	18.37	15.65	90.6	2.88	75.39	D. 6/52	8.50	
	D. 34/52	19.69	13.68	88.1	2.69	70.42	D. 34/52	8.40	
	Mean:				3.82	100.00			
	Significant Difference, 20 : 1 :				.54	14.14			
	Sophia, Field 8 East "C". Reaped 5.11.57 at 11.50 months. Rainfall:—65.97 inches-								
MEANS OF 5 PLOTS:	D. 141/46	43.99	14.57	88.5	6.41	131.08	D. 141/46	14.32	140
	*B. 41227	38.23	13.97	89.6	5.34	109.20	*B. 41227	12.81	
	D 159/45	35.07	13.46	88.4	4.72	96.52	D. 159/45	10.85	
	D. 62/45	31.19	15.03	89.3	4.69	95.91	D. 62/45	10.37	
	D. 127/45	32.22	12.93	85.4	4.17	85.28	D. 94/45	9.53	
	D. 94/45	26.96	14.82	89.5	4.00	81.80	D. 127/45	8.87	
	Mean:				4.89	100.00			
	Significant Difference, 20 : 1 :				.71	14.52			
	Sophia, Field 12 West "B". Reaped 29.11.57 at 11.50 months. Rainfall:—56.46 inches-								
MEANS OF 5 PLOTS:	B. 49119	50.89	14.57	87.4	7.41	111.26	B. 49119	15.05	141
	B. 47258	49.08	14.17	87.8	6.96	104.50	*B. 41227	14.39	
	*B. 41227	43.50	14.38	88.7	6.25	93.84	Pindar	14.14	
	Pindar	38.90	15.52	90.5	6.04	90.69	B. 47258	14.08	
	Mean:				6.66	100.00			
	Significant Difference, 20 : 1 :				.52	7.81			

* Standard Cane.

TABLE III. (Contd.).— **Results of First Ratoon Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined results for 2 Crops, Plants and 1st Ratoons. Variety.	Combined results for 2 Crops, Plants and 1st Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
	Pln. Enmore, Field V. 27. Reaped 19.11.57 at 12.75 months. Rainfall:—64.88 inches.								
MEANS OF 5 PLOTS:	D. 141/46	45.51	15.63	87.0	7.11	125.84	D. 141/46	11.63	142
	D. 49/46	45.42	14.32	82.5	6.51	115.22	***B. 41227**	**11.36**	
	***B. 41227**	**41.66**	**15.08**	**85.5**	**6.28**	**111.15**	D. 49/46	10.35	
	B. 4711	44.63	13.38	80.8	5.97	105.66	B. 4711	9.92	
	Pindar	37.61	14.55	84.7	5.47	96.81	B. 45137	9.62	
	B. 45137	39.89	13.60	83.4	5.42	95.93	Pindar	9.40	
	B. 43253	35.73	14.92	84.7	5.33	94.34	B. 43253	9.35	
	D. 4/43	38.27	13.85	82.0	5.30	93.81	D. 4/43	9.05	
	P.O.J. 3016	29.97	15.72	88.4	4.71	83.36	P.O.J. 3016	7.82	
	P.O.J. 2967	32.05	13.76	83.1	4.41	78.05	P.O.J. 2967	7.34	
	Mean:				5.65	100.00			
	Significant Difference, 20 : 1:				.95	16.81			
	Pln. L.B.I., Field 83 M. Reaped 12.2.57 at 11.75 months. Rainfall:—112.27 inches.								
MEANS OF 5 PLOTS:	D. 141/46	40.93	12.72	86.2	5.21	111.56	***B. 41227**	**11.28**	143
	***B. 41227**	**39.38**	**12.99**	**86.4**	**5.12**	**109.64**	B. 45270	10.86	
	B. 43413	39.31	12.72	86.0	5.00	107.07	D. 141/46	10.64	
	B. 45270	40.45	11.95	86.2	4.83	103.43	B. 4942	10.61	
	D. 49/46	37.97	11.95	83.9	4.54	97.22	M. 213/40	10.07	
	B. 4214	32.92	13.16	89.9	4.33	92.72	D. 49/46	9.73	
	B. 4942	30.31	13.79	88.4	4.18	89.51	B. 4214	9.41	
	M. 213/40	34.45	12.03	84.5	4.14	88.65	B. 43413	9.30	
	Mean:				4.67	100.00			
	Significant Difference, 20 : 1:				.72	15.42			

* **Standard Cane.**

TABLE III. (Contd.)—**Results of First Ratoon Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined results for 2 Crops, Plants and 1st Ratoons. Variety.	Combined results for 2 Crops, Plants and 1st Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
Pln. Lusignan, Field G.H. 14 E. Reaped 13.9.57 at 12.25 months. Rainfall:—90.15 inches									
MEANS OF 5 PLOTS:	B. 49119	42.90	15.65	87.4	6.71	114.51	B. 49119	13.69	144
	B. 50135	46.44	13.96	85.8	6.49	110.75	B. 50135	12.92	
	B. 4214	42.10	13.90	85.0	5.85	99.83	B. 50347	12.49	
	B. 50347	43.88	13.29	87.3	5.83	99.49	B. 4214	11.92	
	B. 49353	36.12	15.50	86.9	5.69	95.56	B. 49353	11.89	
	B. 5098	40.74	13.53	83.6	5.51	94.03	***B. 41227**	**11.52**	
	***B. 41227**	**36.62**	**14.10**	**84.8**	**5.16**	**88.05**	B. 5098	11.11	
	P.O.J. 2967	28.64	12.94	83.9	3.71	63.31	P.O.J. 2967	8.91	
	Mean:				5.86	100.00			
	Significant Difference, 20:1:				.96	16.38			
Pln. Ogle, Field 41 O. Reaped 19.9.57 at 13.25 months. Rainfall:—104.17 inches									
MEANS OF 5 PLOTS:	***B. 41227**	**32.51**	**14.21**	**86.1**	**4.62**	**117.26**	***B. 41227**	**9.98**	145
	B. 5124	29.56	14.82	85.9	4.38	111.17	B. 5124	8.79	
	B. 51129	27.56	14.24	83.7	3.92	99.49	B. 51129	8.66	
	B. 4995	28.75	13.48	85.3	3.87	98.22	B. 49257	8.19	
	Pindar	27.32	13.92	84.2	3.80	96.45	D. 259/46	8.19	
	B. 5098	30.53	12.29	82.0	3.75	95.18	B. 4995	8.05	
	D. 259/46	28.13	12.95	84.5	3.64	92.39	B. 5098	7.95	
	B. 49257	33.64	10.63	77.3	3.57	90.61	Pindar	7.29	
	Mean:				3.94	100.00			
	Significant Difference, 20:1:				.43	10.91			

***Standard Cane.**

TABLE III. (Contd.)—**Results of First Ratoon Variety Trials on Berbice Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Combined results for 2 Crops, Plants and 1st Ratoons. Variety.	Combined results for 2 Crops, Plants and 1st Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
Pln. Albion, Field A, 69 W.S. ½ Reaped 20.5.57 at 12.25 months. Rainfall:—95.19 inches.									
MEANS OF 5 PLOTS:	B. 49119	28.59	14.83	88.2	4.29	115.63	B. 49119	9.29	146
	B. 49257	29.81	13.61	87.4	4.06	109.43	*B. 41227	8.89	
	B. 4942	26.75	14.85	88.0	3.97	107.01	B. 4942	7.99	
	*B. 41227	25.39	15.48	89.8	3.93	105.93	B. 4995	7.41	
	B. 4995	24.89	14.33	87.8	3.57	96.23	B. 49257	7.32	
	B. 49354	24.02	14.32	87.5	3.44	92.72	B. 49354	7.17	
	B. 49353	23.19	14.30	89.3	3.32	89.49	B. 49353	6.85	
	B. 4956	24.05	13.08	87.4	3.14	84.64	B. 4956	5.87	
	Mean:				3.71	100.00			
	Significant Difference, 20 : 1:				.70	18.87			
Pln. Albion, Field N, 63 W.S. "A". Reaped 26.11.57 at 11.25 months. Rainfall:—60.16 inches.									
MEANS OF 5 PLOTS.	B. 49119	29.31	14.69	82.7	4.30	119.11	B. 50112	11.76	147
	B. 50112	25.85	15.36	89.0	3.97	109.97	B. 49119	11.67	
	*B. 41227	24.56	15.45	88.3	3.79	104.99	B. 5037	10.44	
	B. 5037	23.92	14.92	88.4	3.57	98.89	B. 5028	10.16	
	Pindar	31.30	16.00	88.6	3.41	94.46	*B. 41227	9.96	
	B. 5011	23.66	13.97	85.0	3.31	91.69	B. 5011	9.83	
	B. 5028	24.15	13.63	86.3	3.29	91.14	Pindar	9.71	
	D. 184/46	21.02	15.48	88.0	3.25	90.03	D. 184/46	9.48	
	Mean:				3.61	100.00			
	Significant Difference, 20: 1:				—	—			
Pln. Albion, Field N, 63 W.S. "B". Reaped 26.11.57 at 9.75 months. Rainfall:—46.98 inches.									
MEANS OF 5 PLOTS:	D. 141/46	32.74	17.87	89.5	5.85	115.38	D. 141/46	14.44	178
	*B. 41227	33.53	16.78	88.4	5.63	111 05	B. 47258	13.79	
	B. 47258	34.74	16.07	87.2	5.58	110.06	N.C.O. 310	13.34	
	B. 50135	31.40	16.33	87.1	5.13	101.18	B. 50135	13.10	
	D. 133/46	29.82	16.44	87.6	4.90	96.65	*B. 41227	12.99	
	N.C.O. 310	26.75	17.62	87.0	4.71	92.90	D. 133/46	12.45	
	B. 45137	25.80	17.55	88.3	4.53	89.35	B. 45137	11.49	
	H. 37-1933	28.36	15.00	83.9	4.26	84.02	H. 37-1933	10.15	
	Mean:				5.07	100.00			
	Significant Difference, 20: 1:				.98	19.33			

*Standard Cane.

TABLE III. (Contd.)—**Results of First Ratoon Variety Trials on Berbice Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined results for 2 Crops, Plants and 1st Ratoons. Variety.	Combined results for 2 Crops, Plants and 1st Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
	Pln. Port Mourant, Field A.E.W. 43. Reaped 20.10.57 at 10.00 months. Rainfall:—40.51 inches.								
MEANS OF 4 PLOTS:	B. 47258	40.82	13.29	81.8	5.43	123.97	B. 47258	10.82	154
	*B. 41227	35.97	13.33	81.9	4.80	109.59	*B. 41227	9.89	
	Pindar	33.88	13.27	81.8	4.49	102.51	B. 37161	9.56	
	B. 37161	32.55	13.01	81.3	4.24	96.80	B. 47225	9.35	
	B. 47225	30.05	12.39	80.8	3.72	84.93	Pindar	8.90	
	B. 47379	29.18	12.44	80.5	3.63	82.88	B. 47379	8.51	
	Mean:				4.38	100.00			
	Significant Difference, 20 : 1:				.45	10.27			
	Pln. Port Mourant, Field P.M.E. 1. Reaped 24.10.57 at 10.00 months. Rainfall:—35.10 inches.								
MEANS OF 3 PLOTS:	*B. 41227	34.84	15.83	86.4	5.52	114.05	*B. 41227	14.32	181
	B. 37161	34.37	15.74	88.7	5.41	111.78	B. 37161	13.92	
	Pindar	32.29	15.58	87.4	5.03	103.93	B. 47225	13.23	
	B. 47225	32.63	14.84	86.4	4.84	100.00	H. 37-1933	12.02	
	H. 37-1933	27.78	15.50	86.5	4.31	89.05	Trojan	11.99	
	Trojan	25.12	15.58	86.6	3.92	80.99	Pindar	11.80	
	Mean:				4.84	100.00			
	Significant Difference, 20 : 1:				.79	16.32			
	Pln. Port Mourant, Field John's E. 26. Reaped 2.12.57 10.00 months. Rainfall:—30.23 inches.								
MEANS OF 4 PLOTS.	B. 47258	38.32	15.10	85.3	5.79	109.25	B. 47258	12.49	182
	B. 47225	37.15	15.13	88.0	5.62	106.04	*B. 41227	12.11	
	B. 37161	37.52	14.94	86.5	5.61	105.85	B. 37161	11.84	
	*B. 41227	35.37	15.24	86.4	5.39	101.75	B. 47225	11.54	
	B. 47379	35.80	14.15	88.7	5.07	95.66	B. 47379	11.52	
	Pindar	28.80	15.11	86.7	4.35	82.08	Pindar	9.35	
	Mean:				5.30	100.00			
	Significant Difference, 20 : 1:				.69	13.02			
	Pln. Skeldon, Field 133 B. Section 80. Reaped 27.11.57 at 11.50 months. Rainfall:—46.86 inches.								
MEANS OF 4 PLOTS:	B. 47258	48.60	11.78	81.8	5.72	111.28	*B. 41227	11.45	155
	*B. 41227	47.37	11.85	81.4	5.61	109.14	B. 47258	11.04	
	Eros	42.40	13.03	84.6	5.52	107.39	B. 37161	10.77	
	B. 37161	45.67	12.05	83.7	5.50	107.00	Eros	10.61	
	B. 47225	41.62	12.35	84.9	5.14	100.00	B. 47225	10.18	
	H. 37-1933	42.35	11.39	82.8	4.82	93.77	Pindar	9.46	
	Pindar	42.75	10.87	80.0	4.64	90.27	H. 37-1933	9.36	
	Trojan	35.67	11.73	81.2	4.18	81.32	Trojan	9.35	
	Mean:				5.14	100.00			
	Significant Difference, 20 : 1:				38	7.39			

* **Standard Cane.**

TABLE III. (Contd.)—**Results of First Ratoon Variety Trials on Riverside Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined results for 2 Crops, Plants and 1st Ratoons. Variety.	Combined results for 2 Crops, Plants and 1st Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
	Plm. Versailles. Field G.F. "I". Reaped 9.9.57 at 11.50 months. Rainfall:—83.86 inches.								
MEANS OF 5 PLOTS:	Pindar	21.04	14.65	88.2	3.08	122.22	***B. 41227**	**10.51**	153
	***B. 41227**	**21.51**	**13.80**	**87.3**	**2.97**	**117.86**	B. 49354	9.52	
	B. 49354	20.35	13.70	86.2	2.78	110.32	B. 4995	8.98	
	B. 50267	19.06	13.39	86.5	2.55	101.19	Pindar	8.80	
	B. 50155	20.82	11.73	82.7	2.44	96.83	B. 50155	8.79	
	B. 4995	17.43	12.89	86.5	2.25	89.29	B. 49353	8.52	
	B. 49353	17.06	12.44	84.3	2.22	88.10	P.O.J. 3016	7.79	
	P.O.J. 3016	13.77	13.39	88.2	1.84	73.02	B. 50267	7.61	
	Mean:				2.52	100.00			
	Significant Difference, 20:1:				.49	19.44			

Results of First Ratoon Variety Trials on Pagassy Clay.

	Plm. Blairmont, Field 15 H.P. Reaped 11.9.57 at 12.50 months. Rainfall:—84.10 inches.								
MEANS OF 5 PLOTS:	B. 4995	43.66	14.70	87.9	6.42	114.64	Pindar	12.72	148
	***B. 41227**	**40.58**	**14.48**	**86.0**	**5.88**	**105.00**	***B. 41227**	**12.46**	
	B. 49354	39.29	14.70	85.8	5.78	103.21	B. 4995	11.71	
	B. 4711	43.44	13.23	84.3	5.75	102.68	B. 4711	11.68	
	Pindar	38.56	14.89	87.1	5.74	102.50	B. 49354	11.40	
	B. 43253	37.53	15.24	87.9	5.72	102.14	B. 43253	11.30	
	B. 49353	33.62	14.44	87.8	4.85	86.61	B. 49353	10.06	
	M. 134/32	35.31	13.18	84.8	4.65	83.04	M 134/32	9.95	
	Mean:				5.60	100.00			
	Significant Difference, 20:1:				—	—			

* **Standard Cane.**

TABLE III. (Contd.)—**Results of First Ratoon Variety Trials on Pegassy Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined results for 2 Crops. Plants and 1st Ratoons. Variety.	Combined results for 2 Crops. Plants and 1st Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
	Pln. Diamond, Field G.G. 21 E. Reaped 4.3.57 at 12.00 months. Rainfall:—127.38 inches.								
	*B. 41227	48.28	13.37	87.6	6.45	122.39	*B. 41227	13.58	
	B. 45137	45.87	12.63	85.4	5.79	109.87	B. 4214	13.46	
	B. 43413	45.39	12.75	85.5	5.79	109.87	Pindar	13.38	
	Pindar	36.99	14.59	90.1	5.40	102.47	B. 43413	11.65	
MEANS OF 5 PLOTS:	B. 4214	36.06	14.64	91.0	5.28	100.19	B. 4942	11.49	149
	M. 213/40	43.50	11.54	81.3	5.02	95.26	M. 213/40	11.46	
	B. 4942	32.56	14.45	89.2	4.71	89.37	B. 45137	11.43	
	B. 49354	32.93	14.05	87.9	4.62	87.67	B. 37161	11.30	
	B. 37161	32.52	13.32	89.1	4.33	82.16	B. 49354	11.15	
	Mean:				5.27	100.00			
	Significant Difference, 20 : 1 :				.87	16.51			
	Pln. Diamond, Field 115. Reaped 25.9.57 at 12.75 months. Rainfall:—101.29 inches.								
	*B. 41227	44.33	14.07	86.5	6.24	128.39	*B. 41227	14.38	
	Pindar	36.68	15.14	90.6	5.56	114.40	Pindar	12.90	
	B. 45137	37.78	14.68	88.2	5.55	114.20	B. 47258	12.52	
	†B. 47258	36.98	14.81	90.3	5.47	112.55	B. 45137	12.07	
MEANS OF 5 PLOTS:	D. 4/43	37.21	13.11	86.5	4.88	100.41	D. 4/43	10.53	150
	B. 45270	35.63	12.87	86.7	4.59	94.44	B. 47399	10.20	
	B. 47399	32.09	13.37	87.5	4.29	88.27	B. 37161	10.15	
	†B. 37161	29.11	13.30	88.6	3.87	79.63	B. 45270	10.04	
	P.O.J. 3016	24.29	13.49	86.7	3.28	67.49	P.O.J. 3016	8.48	
	Mean:				4.86	100.00			
	Significant Difference, 20 : 1 :				.69	14.20			

* Standard Cane.
† Badly damaged by rats.

TABLE III. (Contd.)—**Results of First Ratoon Variety Trials on Pegassy Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined results for 2 Crops, Plants and 1st Ratoons. Variety.	Combined results for 2 Crops, Plants and 1st Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
	Pln. Lconora, Field Ed. 66. Reaped 22.3.57 at 11.00 months. Rainfall:—128.86 inches.								
MEANS OF 5 PLOTS:	*B. 41227	37.99	15.85	89.4	6.02	125.42	*B. 41227	12.90	151
	B. 46351	35.73	15.13	85.1	5.41	112.71	D. 141/46	11.76	
	D. 141/46	41.63	12.92	85.6	5.38	112.08	B. 4214	11.02	
	B. 4214	34.26	14.85	89.3	5.09	106.04	B. 46351	10.09	
	D. 49/46	37.90	12.46	79.0	4.72	98.33	B. 43413	9.88	
	B. 43413	33.52	13.52	82.8	4.53	94.37	D. 49/46	9.53	
	B. 43214	29.67	14.11	85.7	4.19	87.29	D. 259/46	8.91	
	D. 259/46	28.40	14.13	86.6	4.01	83.54	B. 4942	8.76	
	B. 4942	24.88	15.57	88.6	3.87	80.62	B. 43214	8.37	
	Mean:				4.80	100.00			
	Significant Difference, 20:1:				.81	16.87			
	Pln. Wales, Field Y.R. 36 E. Reaped 10.9.57 at 12.00 months. Rainfall:—127.39 inches.								
MEANS OF 5 PLOTS.	D. 141/46	49.36	12.69	84.7	6.26	120.85	D. 141/46	11.93	152
	***B. 41227**	**41.10**	**14.78**	**89.4**	**6.07**	**117.18**	***B. 41227**	**11.39**	
	D. 49/46	40.67	12.99	84.3	5.28	101.93	B. 4711	10.23	
	B. 4711	40.27	12.53	83.3	5.05	97.49	Pindar	9.96	
	B. 47379	36.03	13.37	87.5	4.82	93.05	D. 49/46	9.28	
	Pindar	32.39	14.58	88.1	4.72	91.12	B. 47379	8.95	
	P.O.J. 3016	33.98	13.84	88.4	4.70	90.73	B. 45270	8.67	
	B. 45270	34.79	13.10	86.2	4.56	88.03	P.O.J. 3016	8.20	
	Mean:				5.18	100.00			
	Significant Difference, 20:1:				.75	14.48			

* **Standard Cane.**

D. SECOND RATOON VARIETY TRIALS.

Twenty-three (23) Variety Trials were reaped as Second Ratoons in 1957, the results of which are presented in Table IV. These experiments are classified according to soil type and locality as follows :—

Soil Type and Locality.	Index Nos. of Trials.	No. of Trials.
Clays—Demerara.	108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 143.	14
Clays—Berbice.	121, 122, 123, 124.	4
Pegassy Clay.	125, 127, 128, 129, 130.	5

TABLE IV.—Results of Second Ratoon Variety Trials on Demerara Frontland Clay.

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Variety.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
	Sophia, Field 13 East "A". Reaped 24.3.57 at 11.75 months. Rainfall:—109.61 inches.								
MEANS OF 5 PLOTS:	B. 49198	37.66	15.22	90.8	5.73	125.66	*B. 41227	19.84	108
	*B. 41227	34.28	16.08	90.3	5.64	123.68	B. 5098	18.59	
	B. 5098	34.65	15.27	90.1	5.29	116.01	B. 49198	17.36	
	B. 4956	35.64	14.41	91.1	5.14	112.92	B. 50275	17.18	
	B. 50275	30.75	15.87	91.2	4.88	107.02	B. 4956	16.91	
	B. 5028	29.00	15.21	90.4	4.41	96.71	B. 5028	15.90	
	B. 49346	30.17	14.27	88.9	4.31	94.52	B. 50184	15.47	
	B. 50184	26.56	16.21	90.6	4.30	94.30	B. 5041	14.40	
	B. 5041	19.52	16.82	88.6	3.28	71.93	B. 49346	13.89	
	B. 4905	17.31	15.04	91.8	2.60	57.02	B. 4905	13.21	
	Mean:				4.56	100.00			
	Significant Difference, 20 : 1:				.98	21.49			
	Sophia, Field 5 West "B". Reaped 3.9.57 at 11.50 months. Rainfall:—72.31 inches.								
MEANS OF 5 PLOTS:	D. 141/46	47.28	15.37	90.4	7.26	154.14	D. 141/46	23.93	109
	D. 49/46	41.92	13.96	86.8	5.85	124.20	D. 49/46	21.24	
	D. 62/45	35.03	15.57	88.8	5.45	115.71	*B. 41227	18.68	
	D. 94/45	36.76	14.30	89.1	5.26	111.68	D. 62/45	18.10	
	*B. 41227	33.30	15.04	89.9	5.01	106.37	D. 56/45	18.09	
	D. 56/45	30.57	16.34	92.5	5.00	106.16	D. 94/45	17.80	
	B. 49197	34.07	13.36	86.4	4.55	96.60	D. 27/45	16.56	
	D. 27/45	28.26	15.27	89.1	4.32	91.72	B. 43253	15.55	
	B. 43253	25.85	15.09	88.7	3.90	82.80	B. 49197	15.20	
	B. 46218	20.33	16.07	88.9	3.27	69.43	B. 46218	14.07	
	D. 275/46	14.15	13.65	86.5	1.93	40.98	D. 275/46	11.26	
	Mean:				4.71	100.00			
	Significant Difference, 20 : 1:				1.09	23.14			
	Sophia, Field 5 West "A". Reaped 5.9.57 at 11.25 months. Rainfall:—71.50 inches.								
MEANS OF 5 PLOTS:	*B. 41227	38.68	14.64	88.8	5.66	125.50	*B. 41227	20.05	110
	B. 4362	34.15	15.55	88.9	5.31	117.74	B. 4362	19.30	
	B. 46351	37.31	14.11	86.8	5.26	116.63	B. 45137	18.75	
	B. 45270	41.05	12.67	86.1	5.20	115.30	B. 43214	18.21	
	B. 43214	34.05	15.09	86.8	5.14	113.97	B. 45270	16.82	
	B. 45137	33.36	14.76	89.4	4.92	109.09	B. 46351	16.74	
	B. 4373	32.48	15.02	84.5	4.88	108.20	B. 4373	16.72	
	B. 46340	29.12	14.06	87.6	4.09	90.69	B. 46136	16.03	
	B. 46136	24.92	14.44	87.6	3.89	86.25	B. 46340	15.78	
	P.O.J. 3016	21.36	14.55	88.4	3.11	68.96	P.O.J. 3016	12.23	
	P.O.J. 2967	15.25	14.38	89.3	2.19	48.56	P.O.J. 2967	10.58	
	Mean:				4.51	100.00			
	Significant Difference, 20 : 1:				1.06	23.50			

*** Standard Cane.**

BLE IV. (Contd.)— **Results of Second Ratoon Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre. Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Variety.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Sucrose in Cane per Acre. Tons.	Trial No.
	Sophia, Field 10 West "B". Reaped 20.9.57 at 11.00 months. Rainfall:—65.92 inches.								
OF 5 RS:	***B. 41227**	**28.42**	**15.81**	**89.3**	**4.50**	**134.73**	***B. 41227**	**19.47**	111
	D. 4/43	28.40	15.28	88.6	4.34	129.94	D. 49/46	18.40	
	D. 49/46	25.81	15.04	87.9	3.88	116.17	D. 94/45	17.25	
	B. 4711	25.22	14.98	88.8	3.78	113.17	B. 4711	16.99	
	D. 94/45	22.19	16.20	90.9	3.60	107.78	D. 4/43	16.64	
	D. 56/45	18.87	16.99	92.7	3.20	95.81	D. 56/45	16.35	
	B 47399	21.91	14.51	88.5	3.18	95.21	B. 47399	15.61	
	P.O.J. 3016	13.49	14.17	89.3	1.91	57.19	P.O.J. 3016	12.68	
	P.O.J. 2967	11.12	15.19	89.5	1.70	50.90	P.O.J. 2967	10.65	
	Mean:				3.34	100.00			
	Significant Difference, 20 : 1 :				1.18	35.33			
	Sophia, Field 10 West "A". Reaped 24.9.57 at 11.00 months. Rainfall:—64.98 inches.								
OF 5 RS:	***B. 41227**	**30.41**	**15.56**	89.5	**5.27**	**127.29**	B. 50135	19.11	112
	B. 50135	31.81	15.38	90.2	4.89	118.12	***B. 41227**	**18.41**	
	B. 50311	21.02	14.37	89.5	4.46	107.73	B. 5037	17.36	
	B. 50267	30.39	13.38	86.6	4.07	98.31	B. 50267	16.61	
	B. 5047	22.24	15.90	90.1	3.94	95.17	B. 50210	16.07	
	B. 50210	26.56	14.68	86.5	3.90	94.20	B. 50311	15.98	
	B. 50268	26.61	14.38	89.0	3.83	92.51	B. 50268	15.90	
	B. 5037	23.70	15.89	91.4	3.77	91.06	B. 5047	14.35	
	B. 50370	22.77	13.81	86.5	3.15	76.09	B. 50370	14.00	
	Mean:				4.14	100.00			
	Significant Difference, 20 : 1 :				1.07	25.85			
	Sophia, Field 10 East "A". Reaped 11.10.57 at 11.25 months. Rainfall:—64.40 inches.								
	D. 141/46	23.18	16.13	90.0	3.74	138.01	D. 141/46	17.35	
	D. 49/46	24.00	14.56	86.9	3.49	128.78	D. 49/46	16.17	
	B. 43214	21.26	14.87	85.9	3.16	116.61	***B. 41227**	**16.01**	
	***B. 41227**	**20.28**	**15.17**	**89.3**	**3.08**	**113.65**	B. 50135	15.19	
	D. 2/46	17.24	17.37	90.8	2.99	110.33	B. 43214	14.49	
	D. 127/45	20.58	13.82	86.4	2.84	104.80	D. 2/46	14.21	
OF 5	B. 50135	19.86	14.22	87.1	2.82	104.06	D. 13/52	14.08	
RS:	B. 50377	18.19	15.32	87.8	2.79	102.95	B. 50377	13.98	113
	D. 13/52	19.45	14.22	86.2	2.77	102.21	D. 94/45	13.46	
	D. 56/45	14.56	16.25	90.8	2.37	87.45	D. 127/45	13.15	
	D. 27/45	15.12	14.79	87.9	2.24	82.66	D. 27/45	13.05	
	D. 94/45	15.02	14.74	88.6	2.22	81.92		12.68	
	D. 14/52	13.21	13.59	83.6	1.80	66.42	D. 14/52	12.53	
	P.O.J. 3016	10.57	16.05	90.6	1.70	62.73	P.O.J. 3016	10.37	
	Mean:				2.71	100.00			
	Significant Difference, 20 : 1 :				.48	17.71			

* **Standard Cane.**

TABLE IV (contd.).—Results of Second Ratoon Variety Trials on Demerara Frontland C

	Variety.	Cane per Acre Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Variety.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Sucrose in Cane per Acre, Tons.
	Sophia. Field 16 East "B". Reaped 7.11.57 at 11.25 months. Rainfall:—61.67 inches.							
MEANS OF PLOTS:	D. 26/52	28.35	14.90	88.1	4.22	133.12	*B. 41227	16.26
	*B. 41227	28.76	14.14	87.6	4.07	128.39	D. 26/52	15.10
	Pindar	23.86	16.55	90.0	3.95	124.61	B. 50275	14.18
	D. 94/45	24.30	14.79	88.4	3.59	113.25	Pindar	14.17
	D. 62/45	23.33	15.06	87.6	3.51	110.73	B. 50155	13.84
	B. 50268	25.66	13.74	86.3	3.44	108.52	B. 50268	13.49
	D. 2/46	20.56	16.22	89.0	3.38	106.62	B. 50252	12.40
	B. 50155	26.85	12.30	82.8	3.30	104.10	D. 62/45	12.08
	B. 50268	23.87	13.41	85.7	3.20	100.95	P.O.J. 3016	11.99
	B. 50275	22.22	13.79	85.8	3.06	96.53	B. 50377	11.72
	P.O.J. 3016	16.86	15.55	89.7	2.62	82.65	D. 2/46	11.53
	B. 50377	15.97	15.41	87.6	2.46	77.60	D. 94/45	11.51
	D. 14/52	16.91	12.98	84.4	2.19	69.06	D. 14/52	11.24
	D. 10/52	10.25	13.89	84.6	1.42	44.79	D. 10/52	10.47
	Mean:				3.17	100.00		
	Significant Difference. 20:1:				.62	19.56		
	Sophia. Field 16 East "A". Reaped 13.11.57 at 11.25 months. Rainfall:—55.57 inches.							
MEANS OF PLOTS:	D. 141/46	26.24	15.66	88.5	4.11	140.27	D. 141/46	15.27
	B. 47162	27.38	14.77	84.7	4.05	138.28	*B. 41227	14.74
	D. 8/52	26.54	13.98	85.7	3.71	126.62	D. 8/52	14.62
	*B. 41227	25.89	13.83	86.5	3.58	122.18	B. 50267	14.56
	B. 43214	25.43	13.57	81.7	3.45	117.75	B. 47162	14.50
	B. 48872	25.71	13.83	79.4	3.55	109.90	B. 48872	13.79
	B. 50267	25.06	12.52	82.8	3.14	107.17	D. 18/52	13.05
	D. 2/52	18.29	15.20	87.8	2.78	94.88	B. 43214	12.65
	D. 18/52	19.56	13.70	83.3	2.68	91.47	D. 2/52	12.44
	D. 12/52	19.35	12.90	83.0	2.50	85.32	D. 12/52	11.55
	D. 3/52	19.52	12.39	79.9	2.42	82.59	D. 3/52	11.11
	D. 22/52	17.42	13.12	83.1	2.28	77.82	D. 22/52	10.85
	D. 53/52	16.89	12.32	83.8	2.08	70.99	D. 53/52	9.47
	D. 1/52	7.13	13.93	83.4	.99	33.79	D. 1/52	6.52
	Mean:				2.93	100.00		
	Significant Difference. 20:1:				.54	18.43		

*Standard Cane.

BLE IV. (Contd.)—Results of Second Ratoon Variety Trials on Demerara Frontland Clay.

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Variety.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
	Pln. L.B.I., Field 4 Felicity. Reaped 9.4.57 at 12.25 months. Rainfall:—105.77 inches.								
	M.213/40	44.50	14.54	84.3	6.47	110.60	B.4362	18.37	
	D.37/45	40.45	15.51	86.7	6.27	107.18	B.4744	17.73	
	B.4362	38.62	15.88	85.9	6.13	104.79	*B.41227	17.54	
S OF 5	*B.41227	38.03	16.01	85.3	6.09	104.10	D.27/45	17.35	
TS.	B.4744	41.44	14.05	81.8	5.82	99.49	D.37/45	17.11	117
	D.27/45	38.79	14.81	83.5	5.74	98.12	B.47225	16.96	
	B.47225	34.33	15.37	87.0	5.48	93.68	M.213/40	16.95	
	B.43214	35.18	13.73	81.2	4.83	82.56	B.43214	15.24	
	Mean:				5.85	100.00			
	Significant Difference, 20 : 1:				—	—			
	Pln. L.B.I., Field 83 Montrose. Reaped 29.11.57 at 9.50 months. Rainfall:—39.58 inches.								
	B.4214	29.42	14.44	89.9	4.25	112.73	*B.41227	15.28	
	*B.41227	37.51	10.65	81.8	4.00	106.10	B.45270	14.57	
S OF 5	M.213/40	32.98	11.36	82.3	3.75	99.47	D.141/46	14.25	
TS.	B.43413	28.74	12.90	82.8	3.71	98.41	B.4942	14.11	
	B.45270	35.11	10.55	81.0	3.71	98.41	M.213/40	13.82	143
	D.49/46	35.84	10.14	74.2	3.63	96.29	B.4214	13.66	
	D.141/46	27.10	13.29	86.6	3.61	95.76	D.49/46	13.36	
	B. 4942	26.51	13.18	86.9	3.50	92.84	B.43413	13.01	
	Mean:				3.77	100.00			
	Significant Difference, 20 : 1:				—	—			
	Pln. Leonora, Field Edinburgh "I". Reaped 1.4.57 at 11.25 months. Rainfall:—109.57 inches.								
	B.4362	27.40	15.91	89.5	4.36	128.24	D.49/46	19.33	
	D.49/46	29.17	14.51	87.3	4.23	124.41	B.4362	18.72	
S OF 5	*B.41227	25.54	15.50	89.9	3.96	116.47	*B.41227	18.60	
TS:	B.43214	24.05	14.67	88.3	3.53	103.82	B.4744	16.88	
	B.4744	21.98	15.90	90.8	3.50	102.94	B.43214	15.82	116
	M.213/40	21.88	14.67	88.0	3.21	94.41	M.213/40	15.33	
	D.37/45	18.76	14.42	87.5	2.70	79.41	D.37/45	13.37	
	M.134/32	12.57	13.53	87.7	1.70	50.00	M.134/32	9.61	
	Mean:				3.40	100.00			
	Significant Difference, 20:1:				.46	13.53			

* Standard Cane.

TABLE IV. (Contd.)—Results of Second Ratoon Variety Trials on Demerara Frontland Cl

	Variety.	Cane. per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Combined results for 3 Crops, Plants, 1st and 2nd Ratoons.	
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre, Tons.
Plm. Lusignan, Field 102 M.X.E. Reaped 27.2.57 at 10.50 months. Rainfall:—107.05 inches.								
MEANS OF 5 PLOTS.	*B.41227	36.15	14.24	88.9	5.15	131.38	*B.41227	10.18
	B.49354	26.61	15.30	88.7	4.07	103.83	B.4995	9.56
	B.4942	26.58	15.03	89.9	3.99	101.79	B.49354	8.95
	B.4995	27.45	14.46	91.8	3.97	101.28	B.4942	8.77
	B.49197	29.70	13.32	85.0	3.96	101.02	B.49377	8.37
	B.49122	30.20	12.78	89.7	3.86	98.47	B.49122	8.35
	B.49377	28.01	12.06	80.3	3.38	86.22	B.49197	8.12
	B.4970	25.30	11.71	84.6	2.96	75.51	B.4970	7.15
	Mean:				3.92	100.00		
	Significant Difference, 20 : 1:				.52	13.27		
Plm. Ogle, Field C.L. 36. Reaped 3.9.57 at 12.75 months. Rainfall:—107.36 inches.								
MEANS OF 5 PLOTS:	*B. 41227	32.22	14.46	87.0	4.66	116.21	*B. 41227	17.45
	B. 4942	29.77	14.67	86.4	4.37	108.98	B. 49257	16.96
	B. 49257	34.11	12.60	84.6	4.30	107.23	B. 4942	16.37
	B. 49380	32.60	13.10	83.3	4.27	106.48	B. 49197	16.35
	B. 49197	27.70	13.76	82.9	3.81	95.01	B. 49376	15.37
	B. 49376	28.31	13.37	84.8	3.79	94.51	B. 49380	14.97
	B. 4906	23.74	14.97	87.1	3.55	88.53	B. 4906	14.52
	B. 49309	23.78	13.86	86.8	3.30	82.29	B. 49309	13.54
	Mean:				4.01	100.00		
	Significant Difference, 20 : 1:				.81	20.00		
Plm. Peter's Hall, Field H.B. 3 East. Reaped 8.10.57 at 13.50 months. Rainfall:—97.36 inches.								
MEANS OF 5 PLOTS:	*B. 41227	36.22	13.68	82.7	4.96	136.64	*B. 41227	17.53
	B. 43218	32.20	13.62	84.5	4.39	120.94	B. 43218	16.59
	B. 45137	28.15	13.24	86.4	3.73	102.75	B. 45137	14.89
	B. 4362	26.07	14.28	86.0	3.72	102.48	B. 47225	14.47
	B. 47225	27.48	12.43	84.4	3.42	94.21	B. 4362	14.30
	B. 46230	24.63	13.26	83.9	3.27	90.08	B. 46230	13.53
	D. 24/46	22.32	12.75	82.8	2.84	78.24	D. 24 46	11.96
	M. 423 '41	23.58	11.37	80.7	2.68	73.83	M 423 41	11.01
	Mean:				3.63	100.00		
	Significant Difference. 20 : 1:				.64	17.63		

* Standard Cane.

TABLE IV. (Contd.)—**Results of Second Ratoon Variety Trials on Berbice Fronland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Variety.	Sucrose in Cane per Acre, Tons.	Trial No.
Pln. Albion, Field N. 24 A. Reaped 5.3.57 at 11.25 months. Rainfall:—91.99 inches.									
MEANS OF 5 PLOTS:	B. 4995	31.87	14.59	87.5	4.65	125.00	*B. 41227	14.12	121
	*B. 41227	32.44	13.72	83.1	4.45	119.62	B. 4995	13.76	
	B. 4966	29.77	13.36	82.0	3.98	106.99	B. 49354	11.80	
	B. 4906	28.18	13.80	83.4	3.89	104.57	B. 4906	11.60	
	B. 49122	26.93	13.64	83.1	3.67	98.66	B. 4966	11.56	
	B. 49309	27.24	12.56	86.0	3.42	91.94	B. 49122	11.11	
	B. 49354	24.88	13.36	81.6	3.32	89.25	B. 49309	10.22	
	B. 49377	22.98	10.49	70.5	2.41	64.78	B. 49377	9.03	
	Mean:				3.72	100.00			
	Significant Difference, 20:1:				.72	19.35			
Pln. Port Mourant, Field 38 A.E.E. Reaped 7.3.57 at 12.75 months. Rainfall:—92.45 inches.									
MEANS OF 5 PLOTS:	D. 49/46	42.21	14.16	87.3	5.98	143.75	D. 49/46	18.43	122
	B. 4744	38.92	13.81	87.7	5.37	129.09	*B. 41227	17.81	
	*B. 41227	38.04	13.86	87.7	5.27	126.68	B. 4744	17.60	
	B. 43253	32.90	15.40	88.2	5.07	121.87	D. 37/45	14.41	
	D. 37/45	36.65	13.38	87.7	4.90	117.79	B. 43253	14.31	
	M. 213/40	18.99	12.19	84.1	2.32	55.77	M. 213/40	10.03	
	M. 134/32	21.62	10.32	76.6	2.23	53.61	M. 423/41	9.95	
	M. 423/41	17.89	11.96	82.3	2.14	51.44	M. 134/32	9.32	
	Mean:				4.16	100.00			
	Significant Difference, 20:1:				.87	20.91			
Pln. Port Mourant. Field T.L. 23. Reaped 13.9.57 at 11.75 months. Rainfall:—73.28 inches.									
MEANS OF 5 PLOTS:	*B. 41227	40.50	14.73	86.3	5.97	114.59	B. 4362	17.59	123
	B. 4362	36.83	15.90	85.0	5.86	112.48	*B. 41227	17.09	
	B. 46351	38.51	14.01	84.7	5.40	103.65	B. 47258	16.69	
	D. 49/46	39.43	13.60	83.5	5.36	102.88	B. 45270	15.96	
	B. 47258	34.78	15.22	86.9	5.29	101.54	D. 49/46	15.33	
	B. 45270	39.08	13.15	84.8	5.14	98.66	B. 46351	15.10	
	B. 43218	34.26	13.67	83.0	4.68	89.83	B. 46136	13.69	
	B. 46136	29.22	13.77	84.3	4.02	77.16	B. 43218	13.11	
	Mean:				5.21	100.00			
	Significant Difference, 20:1:				1.13	21.69			

*** Standard Cane.**

TABLE IV. (Contd.)—**Results of Second Ratoon Variety Trials on Berbice Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre,		Combined results for 3 Crops, Plants, 1st and 2nd Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre, Tons.	
	Pln. Rose Hall, Field 3¼ Lot 16. Reaped 8.3.57 at 11.25 months. Rainfall:—91.98 inches.								
MEANS OF 5 PLOTS:	B. 4942	43.61	14.87	85.6	6.48	129.60	B.4942	17.79	124
	*B. 41227	42.72	14.48	85.6	6.19	123.80	*B. 41227	16.91	
	B. 4995	35.32	14.79	88.0	5.23	104.60	B. 4995	15.51	
	B. 49257	41.44	11.95	81.3	4.95	99.00	B. 49257	14.20	
	B. 49376	35.58	13.65	83.9	4.86	97.20	B. 49353	13.59	
	B. 4945	32.40	13.30	83.5	4.31	86.20	B. 49376	13.19	
	B. 49353	29.26	14.17	88.0	4.15	83.00	B. 49301	11.79	
	B. 49301	28.92	13.27	84.8	3.84	76.80	B. 4945	11.63	
	Mean:				5.00	100.00			
	Significant Difference, 20:1.				.70	14.00			

*Standard Cane.

TABLE IV. (Contd.)—**Results of Second Ratoon Variety Trials on Pegassy Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Variety.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
Pln. Diamond, Field G.G. 45. Reaped 26.3.57 at 11.25 months. Rainfall:—120.85 inches.									
MEANS OF 5 PLOTS:	*B. 41227	25.02	15.58	91.2	3.90	137.81	*B. 41227	14.58	125
	B. 49354	18.93	16.18	91.4	3.06	108.13	B. 49354	12.59	
	B. 4966	20.07	15.15	90.5	3.04	107.42	B. 4942	11.90	
	B. 49380	22.38	13.52	85.6	3.02	106.71	B. 4966	11.59	
	B. 4906	17.81	14.54	88.4	2.59	91.52	B. 49380	11.28	
	B. 4942	16.81	15.04	88.7	2.53	89.40	B. 49309	10.65	
	B. 49377	16.40	14.31	86.2	2.35	83.04	B. 49377	10.52	
	B. 49309	17.04	12.84	85.7	2.19	77.39	B. 4906	9.96	
	Mean:				2.83	100.00			
	Significant Difference, 20: 1:				.67	23.67			
Pln. Leonora, Field L. 65. Reaped 12.3.57 at 12.00 months. Rainfall:—139.19 inches.									
MEANS OF 5 PLOTS:	B. 47258	32.48	14.74	86.4	4.79	128.76	B. 47258	14.76	127
	*B. 41227	30.56	14.99	85.5	4.58	123.12	*B. 41227	14.62	
	B. 45137	31.99	13.61	85.3	4.38	116.94	B. 45137	13.88	
	B. 4362	22.58	17.25	88.9	3.90	104.84	B. 4362	13.09	
	B. 47225	24.48	15.03	87.8	3.68	98.92	B. 47225	12.74	
	D. 37/45	22.85	14.97	86.0	3.42	91.94	D. 37/45	10.86	
	B. 4373	19.19	14.08	80.7	2.70	72.58	B. 4744	9.51	
	B. 4744	15.59	14.98	88.5	2.34	62.90	B. 4373	7.61	
	Mean:				3.72	100.00			
	Significant Difference, 20: 1:				.84	22.58			
Pln. Leonora, Field 47 G. Reaped 3.10.57 at 10.50 months. Rainfall:—85.60 inches.									
MEANS OF 5 PLOTS:	B. 47258	46.14	14.88	85.2	6.87	155.43	B. 47258	23.07	128
	*B. 41227	38.77	15.13	86.2	5.86	132.58	*B. 41227	21.08	
	B. 37161	35.29	15.37	89.7	5.42	122.62	B. 37161	19.28	
	P.O.J. 3016	26.86	14.72	89.6	3.95	89.37	B. 43253	17.30	
	B. 43253	27.86	14.01	79.6	3.90	88.24	P.O.J. 3016	16.77	
	B. 47379	31.16	12.06	80.3	3.76	85.07	B. 47379	16.63	
	B. 4373	25.43	12.61	72.2	3.26	73.76	B. 4373	12.64	
	P.O.J. 2967	18.64	12.80	82.7	2.38	53.85	P.O.J. 2967	11.68	
	Mean:				4.42	100.00			
	Significant Difference, 20: 1:				.81	18.33			

* **Standard Cane.**

TABLE IV. (Contd.)—**Results of Second Ratoon Variety Trials on Pegassy Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Variety.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
	Pln. Versailles, Field R.D.Z. 20. Reaped 25.3.57 at 11.25 months. Rainfall:—133.11 inches.								
MEANS OF 5 PLOTS:	B. 4362	30.70	16.21	88.9	4.98	149.55	B. 4362	17.38	129
	***B. 41227**	29.76	15.62	90.2	4.65	139.64	***B. 41227**	16.70	
	B. 45137	26.69	14.79	86.5	3.95	118.62	B. 45137	14.02	
	B. 43253	19.48	15.78	87.5	3.07	92.19	B. 4744	12.66	
	D. 37/45	20.24	14.32	86.7	2.90	87.09	B. 43253	12.24	
	D. 54/43	20.69	12.16	81.6	2.52	75.68	D. 37/45	11.34	
	D. 158/41	19.39	12.44	81.7	2.41	72.37	D. 158/41	10.62	
	B. 4744	15.09	14.45	87.1	2.19	65.77	D. 54/43	9.42	
	Mean:				3.33	100.00			
	Significant Difference, 20:1:				.64	19.22			
	Pln. Wales, Field 53 V.B. Reaped 5.4.57 at 11.00 months. Rainfall:—145.39 inches.								
MEANS OF 5 PLOTS:	B. 47258	39.14	15.65	87.7	6.12	117.24	B. 47258	17.34	130
	***B. 41227**	36.57	16.26	89.6	5.95	113.98	***B. 41227**	16.82	
	B. 47225	33.01	16.48	91.1	5.44	104.21	B. 47225	15.82	
	B. 46378	34.66	15.35	88.0	5.32	101.92	B. 46378	15.37	
	B. 43253	27.31	16.86	89.0	4.60	88.12	B. 46351	14.83	
	B. 46351	30.12	15.20	85.9	4.58	87.74	B. 43253	14.55	
	B. 46136	30.56	14.86	83.5	4.54	86.97	M. 423/41	12.78	
	M. 423/41	25.47	16.63	86.7	4.23	81.03	B. 46136	12.28	
	Mean:				5.22	100.00			
	Significant Difference, 20:1:				.61	11.69			

***Standard Cane**

E. VARIETY PERFORMANCE SUMMARY.

Varieties under test in 1957 are discussed under the following captions :—

1. Standard Canes.
2. Barbados and Demerara Seedlings produced prior to the 1947 Series.
3. Barbados Seedlings of the 1947, 1948 and 1949 Series.
4. Barbados 1950, 1951 and 1952 Series.
5. Demerara Seedlings.
6. Demerara-Mauritius, 1953 Seedlings.
7. Demerara-Barbados Seedlings.
8. Varieties of other Countries.

1. Standard Canes.

B.37161, (B.3365 x B.603).

Trial Nos. : 128, 149, 150, 154, 155, 172, 173, 181, 182, 183, 184.

B.41227, (B.35207 x P.O.J.2878).

These varieties continue to perform well in trials and on the commercial scale. In spite of the low rainfall of 1957, B.41227 which prefers a moderately heavy rainfall gave good yields as did also B.37161 which appears to be more adaptable to a lower rainfall than is B.41227.

B.41227 continues to give higher average yields than B.37161 in trials* and the results from all trials in which these standard canes have both been included are again brought up to date and presented in Table V, which demonstrates their relative merits over a wide range of local conditions.

TABLE V.

Soil Type.	Variety.	Tons Available Pol. per Acre.			Mean Pol. % Cane.
		Plants.	1 R.	2 R.	
Clays	B.41227	6.45 (33)	5.11 (30)	4.37 (23)	12.84 (86)
„	B.37161	5.79 (33)	4.97 (30)	4.12 (23)	12.66 (86)
Pegassy Soils	B.41227	5.60 (9)	5.47 (8)	4.54 (6)	12.81 (23)
„ „	B.37161	5.26 (9)	4.74 (8)	4.08 (6)	13.23 (23)
All Experiments ..	B. 41227	6.28 (42)	5.18 (38)	4.41 (29)	12.83 (109)
„ „ ..	B.37161	5.68 (42)	4.92 (38)	4.11 (29)	12.78 (109)

The figures in parentheses indicate the number of trials from which the means are obtained.

* See page 82 for comparisons of yields on the commercial scale.

Statistical analysis of the data from the trials summarised above has shewn the differences between the yields at each cycle to be highly significant. The data shew no correlation however, between the yield of B.37161 relative to that of B.41227 and (i), the age of the cane at time of reaping, or (ii), with the rainfall during the growth of the crop.

The regression equations for *each* cycle indicate however, that B.37161 approaches B.41227 in yield where the general level of yield is high and to depart more widely from the yield of B.41227 where the general level of yield is low.

2. Barbados and Demerara Seedlings produced prior to the 1947 Series.

B.4362, (B.37161 x P.O.J.2878).

Trial Nos. : 110, 116, 117, 120, 123, 127, 129.

This variety has been fully tested against B.41227 and it is not proposed to include it in future trials.

Under the dry weather conditions that obtained in 1957, B.4362 improved its yield relative to B.41227 in trials at the second ratoon stage but was still unable to equal the yields of the standard. In the fifteen reapings to date as plants, B.4362 has exceeded the yield of B.41227 on only two occasions but it has done so on seven occasions as first ratoons (although in no case by a significant margin), and in three out of thirteen reapings as second ratoons. B.4362 is therefore inferior to B.41227 in respect to its yield of sugar per acre. It is however, a good factory cane and possesses the highest Available Pol. % cane of any of the varieties which can be regarded as commercial canes in British Guiana at present.

B.4362 is an early ripening variety which is susceptible-tolerant to leaf scald disease but moderately susceptible to chlorotic streak. It tends to be more heavily attacked by borers than average.

B.4373, (B.3354 x Co.290).

Trial Nos. : 110, 127, 128, 183, 184.

This variety has also completed its series of trials which have shewn it to be inferior in yield to the standards. B.4373 has been an erratic performer in trials and although it has on occasion outyielded B.41227 by a considerable margin it has more often been itself outyielded by even wider margins. This leaf-scald resistant variety is in general definitely inferior to the standards.

B.43413, (M.D.47 x Co.290).

Trial Nos. : 143, 149, 151, 174.

B.43413 has been reaped as plants in thirteen trials against B.41227. In these it has exceeded the yield of the standard on four occasions, once significantly. Of the nine occasions on which it has been beaten by the standard as

plants three were by significant margins, two of these being on pegasse. In thirteen reapings as first ratoons, B.43413 has beaten the standard on three occasions, while in ten reapings as second ratoons it has outyielded the standard on five occasions, two of these by significant amounts.

In trials, B.43413 has been a consistent performer against B.41227 on clays, on which soil type it has shewn itself almost equal to the standard. Since this variety is tolerant to leaf scald disease it appears to be worthy of moderate trial on the commercial scale. B.43413 possesses a Pol. % Cane somewhat lower than that of B.41227 and its stalks are generally of less than average diameter.

B.45137, (B.38372 x B.34104).

Trial Nos. : 110, 120, 127, 129, 142, 149, 150, 178, 184.

In trials, B.45137 did not approach the yield of the standard as closely during 1957 as in wetter years. Nevertheless, its yields were still good.

In seventeen reapings as plants, B.45137 has only exceeded the yield of the standard twice, the main reason being its relatively poor juice in reapings at this cycle. The juice quality however, improves with ratoon age.

B.45137 shews to best advantage as a ratooner, its yield relative to that of B.41227 improving at each ratoon. Thus, in sixteen reapings as first ratoon, the yield of the standard has been exceeded on seven occasions, four being by significant margins, while in eleven reapings as second ratoons, the yield of the standard has been exceeded on six occasions. It should be noted that the standard tends to be outyielded on areas where the general level of yields is below average which suggests that this variety is hardier than B.41227 or more tolerant to conditions that result in a low level of yield. In view of its general uniform performance relative to the standard, and in spite of its poorer juice quality, it is believed that this cane is worthy of a trial on the commercial scale, particularly on clay soils on which the yield of the standards is below average.

B.45137 is tolerant to leaf scald disease but as noted previously, the leaves exhibit a leaf spot which is occasionally transmitted to other varieties grown in immediate proximity to it.

D.37/45, (B.34104 x Co.331).

Trial Nos. : 116, 117, 122, 127, 129.

The testing of this variety is now completed and the results of the trials reaped to date are summarised herewith.

Cycle.	Yield Index.		Avail. Pol. % Cane Index.	
	Spring.	Autumn.	Spring.	Autumn.
P.	78 (7)	104 (11)	87 (7)	104 (11)
1 R.	83 (7)	111 (11)	97 (7)	103 (11)
2 R.	79 (7)	116 (9)	94 (7)	104 (9)

The figures in parentheses denote the number of trials reaped.

The foregoing summary demonstrates that D.37/45 is essentially an Autumn cane, the yields during the latter half of the year being considerably higher than those obtained during the first half. This appears to be due to the fact that D.37/45 is a heavy-arrowing variety in which there is a rapid renewal of growth with a subsequent fall in juice purity when heavy rains follow arrowing as generally occurs in Spring reapings.

D.37/45 has yielded particularly well on silty clays at Sophia where it is easily the heaviest yielding variety when reaped during the months of September, October and the first half of November at twelve to thirteen months age.

D.37/45 possesses a juice of better than average quality if reaped during the Autumn. It is however, rated as being susceptible to leaf scald disease and is also moderately susceptible to chlorotic streak disease.

D.49/46, (D.103/41 x D.200/36).

Trial Nos. : 109. 111, 113, 116, 122, 123, 142, 143, 151, 152.

This variety has been widely tested and its performance in trials has shewn it to be a good ratooning variety on clays particularly in Autumn reapings. It has not yielded satisfactorily on pegassy soils.

In fifteen plant cane reapings, D.49/46 has only outyielded B.41227 on four occasions, none being by significant margins, while it has itself been outyielded significantly in four of the other eleven occasions. As a plant cane it is thus inferior to B.41227 entirely owing to its poor juice quality at this cycle age. In fifteen first ratoon reapings however, D.49/46 has outyielded B.41227 on eleven occasions, six of these being by significant margins, while it has only once been exceeded in yield at this cycle by a significant amount.

In the twelve second ratoon trials reaped, D.49/46 has outyielded B.41227 in eight, three of these being by significant margins. This variety has therefore shewn itself to be worthy of a trial commercially.

D.49/46 possesses a juice of poor quality as plants but an average one as ratoons. The stalks are erect and of average diameter. It is a moderately heavy-arrowing variety which is resistant to leaf scald disease.

D.141/46, (B.34104 x D.49/41).

Trial Nos. : 109, 113, 115, 140, 142, 143, 151, 152, 178.

D.141/46 has been reaped on twelve occasions as plants and has shewn itself in these reapings to be the equal of B.41227 in yield. In the same number of reapings as first ratoons, D.141/46 has outyielded the standard on ten occasions four being by significant margins while in seven reapings as second ratoons the standard has been outyielded on four occasions, all significantly. This variety is therefore also worthy of trial on the commercial scale.

D.141/46 is a moderately heavy-arrowing variety possessing stalks of slightly less than average diameter and a juice of average quality. It is rated as being susceptible/tolerant to leaf scald disease.

3. Barbados Seedlings of the 1947, 1948 and 1949 Series.

B.4744, (Co.421 x B.4098).

Trial Nos. : 116, 117, 122, 127, 129.

B.4744 has been widely tested. These tests shew it to be unsuited to local conditions. Yields are very erratic and rarely equal to those of B.41227. In only one experiment (on a *Blairmont loam*) has this variety given a yield consistently equal to that of the standard variety.

B.4744 is rated as being susceptible/tolerant to Leaf Scald disease.

B.47225, (B.37161 x P.O.J.2878).

Trial Nos. : 117, 120, 127, 130, 154, 155, 181, 182, 184.

There is nothing to be added to the observations previously made on this variety which has been widely tested locally.

B.47225 gives a yield as plants which approximates those of B.41227, but its yields relative to B.41227 fall rapidly with increasing ratoon age. This comment applies to all soil types.

B.47225 is rated as resistant to Leaf Scald disease. It possesses an Available Pol. % Cane slightly higher than that of the standard.

B.47258, (B.39254 x B.34104).

Trial Nos. : 123, 127, 128, 130, 141, 150, 154, 155, 172, 173, 174, 178, 182, 184.

B.47258 is again strongly recommended for commercial planting as it continues to give in trials, yields that are the equal of those of B.41227 while this variety has the additional advantages of having a slightly higher Available Pol. % Cane and a tolerant rating in respect to Leaf Scald disease.

In twenty-one trials reaped as plants, B.47258 has given an average yield slightly above that of B.41227. The yield of the standard has been exceeded on thirteen occasions, six of these being by significant amounts, while in the other eight tests in which the standard has outyielded the variety, three have been by significant amounts.

In the seventeen trials reaped as first ratoons, the standard has been outyielded in no less than fourteen, one of these being by a significant amount, while in none of the three in which the standard outyielded the variety was the margin significant.

Nine trials have been reaped as second ratoons, B.47258 outyielding the standard in five. In this cycle, the differences in yields are not significant.

B.47258 appears equally suited to clay and negassy soils. When planted on a relatively small scale, rats appear to concentrate their attacks on this variety, the yields of which suffer in consequence. Provided that there is no increase in the rat population however, there should be no increased loss of sugar from this circumstance although the losses in B.47258 from this cause will probably always exceed those of other present commercial varieties. Baiting for rat control should be heavier in fields planted in this variety since such fields probably harbour a larger rat population.

B.47419, (P.O.J.2878 x B.34104).

Trial Nos. : 162, 163.

B.47419 has been reaped as plants in eleven trials in which it exceeded B.41227 in yield on only two occasions. In seven reapings as first ratoons, the yield of the standard has only been exceeded once, while in the three second ratoon reapings to date the yield of the standard has in no case been exceeded. While giving moderately satisfactory yields of sugar, B.47419 is definitely inferior to B.41227 in yielding ability.

B.47419 is rated as being susceptible to Leaf Scald disease.

B.4942, (B.37161 x B.4098).

Trial Nos. : 118, 119, 124, 125, 143, 146, 149, 151.

This variety which shewed promise as plants and which possesses a high Pol. % Cane does not ratoon satisfactorily.

In eleven trials as plants, B.4942 only twice exceeded the yield of B.41227, once significantly. In the other nine trials in which it was beaten by the standard, three were by significant margins.

In ten reapings as second ratoons the yield of the standard was only approached twice, while the margin by which its yield was exceeded on the other eight occasions increased over that of the plant cane cycle, the differences being significant on six occasions.

In the eight reapings as second ratoons to date, the yield of the standard has only been reached once while the margins by which B.41227 has exceeded the variety in this cycle has again increased, six of the seven occasions being by significant amounts.

B.4942 is an attractive cane of good juice quality which however, falls appreciably below the standard in yield especially as ratoons. It is rated as tolerant to Leaf Scald disease.

B.4995, (B.34102 x B.4098).

Trial Nos. : 118, 121, 124, 138, 145, 146, 148, 153.

B.4995, like B.4942, shewed some promise as plants but also failed to ratoon satisfactorily.

In ten reapings as plants it equalled or slightly exceeded the yield of the standard in three but was decisively outyielded in six of the other seven trials.

In ten reapings as first ratoons and five as second ratoons it has only attained the yield of the standard once at each cycle while it was outyielded by wide margins on the other occasions.

B.4995 possesses a juice of average quality and is rated as tolerant to Leaf Scald disease.

B.49119, (B.35218 x B.4098).

Trial Nos. : 104, 107, 135, 141, 144, 146, 147, 162, 163, 179, 180, 185, 190.

Of the varieties under test at present and which have been sufficiently widely tested for a satisfactory assessment of yielding ability to be determined, B.49119 is the only variety definitely outyielding the present major standard B.41227. On the other hand, owing to its susceptibility to Leaf Scald disease this variety cannot be regarded as a rival of B.41227, B.47258, or B.37161 on the commercial scale in British Guiana.

In the thirteen trials reaped as plants to date, B.49119 has outyielded the standard on eight occasions, two of these being by significant margins. Of the five occasions when it has been beaten by B.41227, only once (on a pegassy clay) was the margin significant.

In all seven reapings as first ratoons, the standard was outyielded in every case (two being by significant amounts), while in both second ratoon reapings to date, B.49119 has outyielded the standard.

While B.49119 has shewn itself equal to B.41227 as plants in the trials reaped to date, there is no doubt as to its superiority as a ratooner which is clearly observable not only from the ratoon trials reaped to date but in the nurseries. It is unfortunate that this very promising variety is susceptible to Leaf Scald disease.

B.49119 possesses well-formed stools although the stalks are slightly below average in diameter. The Available Pol. % Cane is average.

B.49119 appears to be a late-ripening cane as plants. In one plant cane trial in which it was reaped at the age of 14½ months, it outyielded all other varieties in the trial by a wide margin and gave the high yield of 9.22 tons of Available Pol. per acre.

B.49353, (B.37161 x P.O.J.2878).

Trial Nos. : 124, 144, 146, 148, 153, 162, 166.

B.49353 possesses a juice of good quality and shewed promise as plants but gave poor yields as ratoons. It is susceptible to Leaf Scald disease.

B.49354, (B.37161 x P.O.J.2878).

Trial Nos. : 118, 121, 125, 146, 148, 149, 153, 190.

B.49354 also possesses a high Pol. % Cane for British Guiana and shewed some promise as plants. However, this variety gave poor yields as first and second ratoons. It is rated as being susceptible/tolerant to Leaf Scald disease.

4. Barbados 1950, 1951 and 1952 Series.

The most promising seedlings of the **B. 1950 series** from the point of view of yielding ability are : B.5037, B.50135, B.50275 and B.50347.

Of this series of seedlings **B.50135** shews the best prospects to date, its yields being close to those of B.41227 while it is rated as resistant to Leaf Scald disease.

B.50112 has also given yields close to those of the standard but it is rated as being very susceptible to Leaf Scald disease.

B.50275 gives heavy yields of cane but its juice quality is poor. Its ratooning ability is also suspect. B.50275 is rated as being susceptible/tolerant to Leaf Scald disease.

B.5037 is a thin and trashy cane which appears capable of good yields on clays provided there is a moderately heavy rainfall but it does not stand up well to dry conditions. B.5037 is rated as tolerant to Leaf Scald disease.

B.50347. This variety gives heavy tonnages of cane but the juice is of very poor quality.

B.50267 which shewed some promise in the sorting trials has behaved erratically in subsequent tests and is quite unsuited to dry conditions. It also possesses a juice of poor quality, particularly as plants.

The **B. 1951 seedlings** have been reaped in field trials as plants while two sorting trials have also been reaped as first ratoons. The most promising from these preliminary tests are, B.51131, B.5121 and B.51116.

B.51131 has given yields as plants closely approximating those of the standard. It appears to be a late-ripening cane and has given its best return as plants relative to the standard at 14½ months age. B.51131 is rated as resistant to Leaf Scald disease.

B.5121 has also given good average yields both as plants and in two reapings as ratoons (more particularly the latter). However, this variety possesses a juice quality below average and is rated as being very susceptible to Leaf Scald disease.

B.51116. In the trials reaped to date this variety has performed moderately satisfactorily against B.41227 and will be tested more widely. It is rated as being susceptible/tolerant to Leaf Scald disease.

The **B. 1952** series of seedlings have been reaped as plants in only two sorting trials to date and there is therefore insufficient data to allow of making any useful comments on them at present.

5. Demerara Seedlings.

The sorting trials of the Demerara 1952 series have been completed and eight seedlings of this series have been placed in tests for further evaluation. Later crosses made at the Station are in nurseries for observation and sorting trial tests and selections therefrom will be made at a later stage. However, six seedlings of the Demerara 1954 series have been placed in Sorting Trials.

It should be noted here that the dry weather experienced during the arrowing season of 1957 resulted in pollen of low viability and fewer seedlings were obtained than was anticipated. The programme of crosses scheduled for 1957 will be repeated in 1958.

6. Demerara–Mauritius 1953 Seedlings.

None of the thirty-eight seedlings selected for trial from this series equalled the standard as plants, while in most cases the juices were of very poor quality. These seedlings were reaped as first ratoons in 1957 with similar results. It is apparent therefore, that none of these seedlings approach B.41227 in yields and further testing of them will not be continued.

7. Demerara-Barbados Seedlings.

Four sorting trials of the D.B. 1953 series were reaped as plants in 1957. With the exception of two of the forty-two seedlings tested, yields in this cycle did not approach those of the standard and first ratoon results will be awaited before further tests of these seedlings are made. The two seedlings of this series with moderate yields as plants are being extended for further tests. These are D.B.169/53 and D.B.255/53.

Thirty-five seedlings of the D.B. 1954 series have been placed in three sorting trials for reaping in 1958.

The first stage selections of the D.B. 1955 series have been made and these have been planted out with B.41227 in comparison plots for second stage selections.

8. Varieties of Other Countries.

A number of the major cane varieties of other countries are now under test and the following comments are made on the data obtained to date.

In the previous Bulletin it was noted that the Mauritius seedlings **M.134/32, M.213/40** and **M.423/41** were quite unsuited to local conditions owing to both low yields and poor quality. The two Javan varieties **P.O.J.2967** and **P.O.J.3016** were also shewn to be unsuited to local conditions.

During 1957, trials containing a number of Hawaiian and Queensland varieties were also reaped.

The following table (Table VI) summarises the results obtained to date where sufficient data have been obtained to warrant presentation.

TABLE VI.

Variety	Tons Pol. per Acre Index. (B.41227=100).			Pol. % Cane Index. (B.41227=100).
	Plants.	1 R.	2 R.	
M.134/32	75 (6)	65 (5)	53 (3)	92 (14)
M.213/40	91 (7)	85 (6)	86 (5)	94 (18)
M.423/41	80 (7)	68 (7)	58 (6)	90 (20)
P.O.J.2967	63 (6)	64 (6)	39 (3)	95 (15)
P.O.J.3016	73 (10)	69 (10)	57 (5)	102 (25)
Pepecuca	71 (5)	79 (1)	—	102 (6)
Trojan	80 (8)	73 (2)	—	102 (10)
Pindar	89 (21)	88 (14)	90 (1)	101 (36)
H.37-1933	76 (5)	80 (3)	—	93 (8)

Pindar.

Trial Nos. : 114, 141, 142, 145, 147, 148, 149, 150, 152, 153, 154, 155, 174; 179, 181, 182, 183, 184, 185, 190.

Pindar has been reaped in twenty-one trials as plants. In these, it has outyielded B.41227 on three occasions, none significantly. On the other hand, the standard has frequently outyielded Pindar by considerable margins, eight of which were by significant amounts. Pindar is therefore definitely inferior to B.41227 in the plant cane cycle.

In fourteen reapings as first ratoons, Pindar has on no occasion exceeded the yield of B.41227 but has been beaten significantly on six occasions. It is therefore also inferior to B.41227 as a first ratoon.

In the single second ratoon trial reaped to date, the yield from Pindar relative to that of B.41227 was of the same order as in plants and first ratoons.

It is apparent from the above summary that Pindar is in general unable to equal the yield of B.41227 in British Guiana. In these trials, Pindar has performed somewhat better on pegassy clays than on clays, but even on these soils its behaviour is nevertheless erratic and it is unlikely to equal B.41227 in yield except on a few scattered areas to which it may be particularly suited.

Pindar arrows heavily in the Autumn. It possesses a juice of average quality and is rated as susceptible/tolerant to Leaf Scald disease.

H.37-1933.

Trial Nos. : 155, 157, 178, 181, 188.

This attractive Hawaiian variety has proved most disappointing in trials. Rapid early growth is not maintained and yields at reaping fall considerably below expectations. Its juice quality is uniformly poor and contrary to what may have been anticipated, H.37-1933 appears to be an early maturing variety in British Guiana.

H.37-1933 is susceptible to Leaf Scald disease.

Preliminary reapings of the Hawaiian varieties, **H.32-1063, H.38-4443, H.38-2915, H.39-3633, H.39-5803** and **H.39-7028** suggest that these are similar to H.37-1933 in respect to yielding ability and juice quality. **H.44-3098** in one reaping as a plant cane has given a yield and juice quality more closely approaching the standard than the Hawaiian varieties previously mentioned and six other plant cane trials in this variety are scheduled for reaping in 1958.

Except H.44-3098 which is rated at present as tolerant to leaf scald disease, the other Hawaiian varieties are rated as either susceptible or very susceptible.

F. GENERAL SUMMARY AND RECOMMENDATIONS.

The cane variety experiments reaped in 1957 confirm the conclusions made in 1957 regarding the yielding ability of B.49119 and B.47258 relative to B.41227.

B.49119 is outstanding as a strong ratooner and has consistently outyielded B.41227 in ratoons. Unfortunately, this variety is susceptible to Leaf Scald disease and cannot be recommended for commercial planting.

B.47258 continues to do well in trials and is recommended for further extention commercially. It has now been shewn to ratoon well down to second ratoons, possesses a juice of average quality, and is tolerant to Leaf Scald disease.

The Demerara varieties D.49/46 and D.141/46 have performed sufficiently well in tests to date to justify their trials on a small scale commercially. It should be noted that these varieties are, however, primarily Autumn crop canes.

Other varieties which appear worthy of consideration for the special conditions referred to in the discussions in the text are, B.45137 and B.43413.

The performance of the more promising and outstanding varieties under test are compared with B.41227 in Table VII. The comparisons are on the basis of yields of Available Pol. per Acre relative to B.41227 which is rated as 100. Pol. % Cane ratings are compared similarly.

On the basis of the results obtained from the trials and from observations of the estates cultivations, the following general recommendations are made.

Cane Variety.	Frontland Clay.		Riverside Clays.	Pegasse.
	Berbice.	Demerara.		
B.41227	55	55	55	55
B.37161	20	20	25	20
B.47258	20	20	15	20
B.45137, B.43413, B.46378, B.4362, D.141/46	5	5	5	5

The figures given refer to the percentage of the area in the particular soil type recommended to be planted in the respective varieties.

These recommendations may be modified in accordance with the results from trials to be reaped in the future. Where conditions on certain estates appear to favour a particular variety more than another the management will necessarily be guided by local experience.

TABLE VII.—**The more Outstanding Varieties Compared with B.41227.**

Variety.	No. of Comparisons.			Available Pol. Per Acre Index. (B.41227=100).			Tons Avail. Pol. per Acre. (B.41227=100).			Available Pol. % Cane Index. (B.41227=100). Mean All Cycles.
	P.	1 R.	2 R.	P.	1 R.	2 R.	P.	1 R.	2 R.	
B. 49119	13	7	2	103	112	113	6.56	5.90	5.33	100
D. 141/46	12	12	7	104	113	111	6.62	5.96	5.24	103
B. 47258	21	17	9	103	107	100	6.56	5.64	4.72	102
*B. 41227	—	—	—	**100**	**100**	**100**	**6.37**	**5.27**	**4.72**	**100**
D. 49/46	15	15	12	89	106	106	5.67	5.58	4.99	96
B. 43413	14	13	10	96	95	104	6.13	5.01	4.91	98
D. 37/45	18	18	17	93	100	101	5.92	5.27	4.77	101
B. 45137	17	16	11	93	98	103	5.92	5.16	4.86	97
B. 47419	11	7	3	94	92	97	5.99	4.85	4.58	98
B. 37161	42	38	29	91	95	94	5.80	5.01	4.44	100
D. 158/41	12	10	10	98	90	91	6.24	4.74	4.30	93
B. 4362	15	15	14	93	95	93	5.92	5.01	4.39	108
B. 46378	18	18	18	94	89	95	5.99	4.69	4.48	97
D. 58/43	6	6	6	92	91	92	5.86	4.80	4.34	92
D. 4/43	12	11	10	93	93	88	5.92	4.90	4.15	94
B. 47225	18	17	12	95	90	82	6.05	4.74	3.87	101
B. 4098	17	15	14	96	88	82	6.13	4.64	3.87	102
Pindar	20	14	1	89	88	90	5.67	4.64	4.25	101
D. 54/43	10	10	10	88	90	87	5.61	4.74	4.11	90
B. 46351	15	14	14	87	92	85	5.54	4.85	4.01	96
B. 4995	10	9	5	92	87	84	5.86	4.58	3.96	102
B. 4942	11	10	8	94	86	81	5.99	4.53	3.82	105
B. 4744	13	13	11	86	92	81	5.48	4.85	3.82	98
B. 43253	10	10	8	88	86	80	5.61	4.53	3.78	107
B. 47379	11	9	4	87	87	78	5.54	4.58	3.68	89
B. 34104	25	19	16	86	81	83	5.48	4.27	3.92	98

* **Standard Cane.**

2. GROWTH AND RIPENING STUDIES OF THE CANE VARIETIES B.41227, B.37161, D.158/41 AND D.37/45.

III. SECOND RATOON CYCLE.

BY

L. S. BIRKETT, C. CAMERON and H. GOMES.

The climatic conditions that prevailed during 1957 were drier than usual and the manner in which this affected the growth and ripening of the varieties in these series of experiments is of interest.

The second ratoon results are presented in Tables I, II and III, while for more easily following the trends the main data are presented graphically in Figure I.

DISCUSSION OF RESULTS.

1. SOPHIA 7 E.

Reaped: September, 1956—March, 1957.

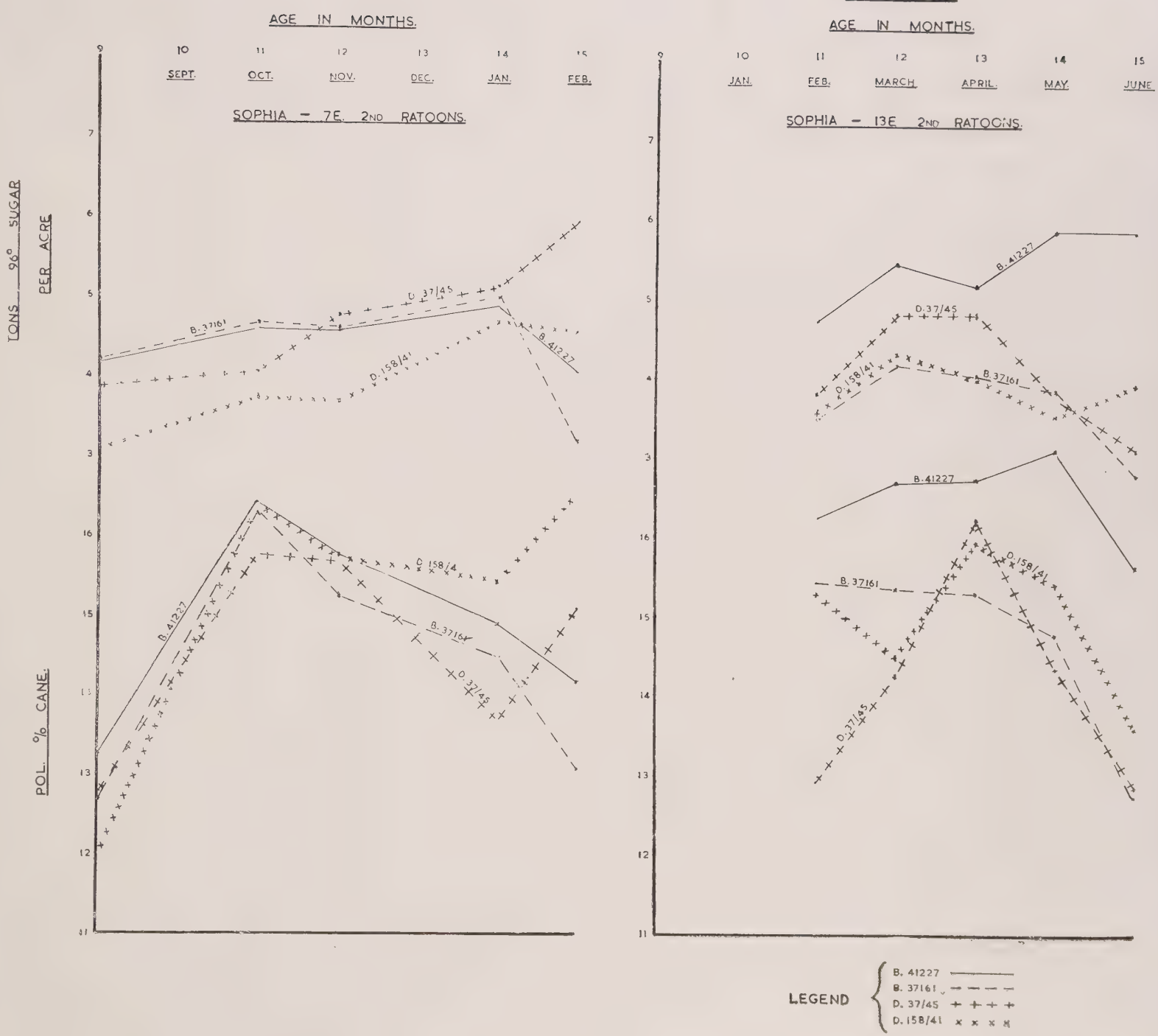
TABLE I.

Age in Months.	Month of Reaping.	Tons 96° Sugar per Acre.				Pol. % Cane.			
		B. 41227	B. 37161	D. 37/45	D. 158/41	B. 41227	B. 37161	D. 37/45	D. 158/41
9 Months ..	Sept.	4.13	4.23	3.84	3.08	13.23	12.68	12.72	11.92
11 „ ..	Oct.	4.61	4.69	4.05	3.72	16.43	16.31	15.75	16.43
12 „ ..	Nov.	4.53	4.62	4.77	3.70	15.74	15.25	15.68	15.70
14 „ ..	Jan.	4.91	5.02	5.14	4.69	14.90	14.47	13.66	15.42
15 „ ..	Feb.	4.06	3.19	5.99	4.53	14.13	13.04	15.10	16.56

In this experiment, D.37/45 arrowed early, counts having showed 23% of the millable stalks to have arrowed by mid-September while a further 35% had flagged. At this date no arrows had emerged in D.158/41 or B.37161 but flagging of millable stalks to the extent of 80% and 19% respectively had commenced in these varieties. By the middle of October arrowing had reached its maximum with 72%, 90%, 29% and 1% of millable stalks arrowed in D.37/45, D.158/41, B.37161 and B.41227 respectively. The corresponding percentages of flagging stalks at this date were 2%, nil, 4% and 1% respectively. B.41227 arrowed for the first time although to a negligible degree. It should also be noted that B.37161 again arrowed less heavily than usual and this variety shewed considerable secondary growth.

The first reaping at nine months age was made in September 1956 during and following a period when the rainfall was considerably above average for the time of year, the actual rainfall for the months of July, August and September

FIGURE I.


AGE IN MONTHS.
10 11 12 13 14 15
SEPT. OCT. NOV. DEC. JAN. FEB.
SOPHIA – 7E. 2ND RATOONS.
TONS 96° SUGAR PER ACRE
POL. % CANE.
B. 37161
D. 37/45
D. 158/41
B. 41227
AGE IN MONTHS.
10 11 12 13 14 15
JAN. FEB. MARCH APRIL. MAY. JUNE
SOPHIA – 13E. 2ND RATOONS.
LEGEND
B. 41227
B. 37161
D. 37/45
D. 158/41

I.

NTHS.

13 APRIL. 14 MAY. 15 JUNE.

D RATOONS.

B. 41227

7/45

B. 37161

227

D. 158/41

AGE IN MONTHS.

10 MAY. 11 JUNE 12 JULY. 13 AUG. 14 SEPT. 15 OCT.

SOPHIA – 4E. 2ND RATOONS.

D. 37/45

D 158/41

B. 41227

B. 37161

B. 41227

D. 158/41

D. 37/45

B. 37161

being 17.24, 12.91 and 12.68 inches respectively. In consequence, the Pol. % Cane and juice purities were low and so also was the yield of 96° sugar per acre. The rainfall of October and November was considerably lower at 4.79 and 6.87 inches respectively and with the marked increase in the Pol. % Cane an appreciable increase in yield occurred at eleven months age.

The December rainfall was very heavy (17.67 inches) and although at twelve months age further growth had been made it was offset by the fall in Pol. % Cane which had commenced in all varieties except D.37 45 which continued to shew a gain in yield at this reaping age.

At fourteen months age, there was a further gain in tonnage of cane accompanied by a general fall in the Pol. % Cane which however, was not sufficient to offset the increased growth. In consequence, yields in excess of those at twelve months were obtained from all varieties.

At fifteen months age, the fall in Pol. % Cane continued in the case of B.41227 and B.37161 but an increase occurred in the case of D.158/41 and D.37/45. The net result was an appreciable reduction in yield as compared with that at fourteen months age in the case of B.41227 and B.37161, with a small decrease for D.158/41 but a further increase in yield from D.37/45.

Data for the Pol. % Cane shewed that this figure increased for all varieties coincident with an increase in the tons 96° sugar per acre up to eleven months age. Between eleven and twelve months age conditions were more or less static in respect to Pol. % Cane and yield but from twelve to fourteen months age, there was a gradual increase in the yield of all varieties, while the Pol. % Cane remained approximately constant in D.158/41 but actually fell in the other varieties. Between fourteen and fifteen months age the Pol. % Cane continue to fall in the two Barbados varieties as did the yield. However, Pol. % Cane actually rose in the two Demerara varieties which was accompanied by an increase in yield in D.37/45.

This experiment has again shewn that varieties behave differently under any given set of conditions and in consequence, there is difficulty in forecasting the likely behaviour of varieties without a careful study of them.

2. SOPHIA 13 E.

Reaped: February, 1957—June, 1957.

TABLE II.

Age in Months.	Month of Reaping.	Tons 96° Sugar per Acre.				Pol. % Cane.			
		B. 41227.	B. 37161	D. 37/45	D. 158/41	B. 41227	B. 37161	D. 37/45	D. 158/41
11 Months ..	Feb.	4.71	3.51	3.81	3.55	16.23	15.43	12.90	15.30
12 ,, ..	Mar.	5.47	4.19	4.80	4.32	16.69	15.37	14.35	14.48
13 ,, ..	Apr.	5.18	4.07	4.81	4.04	16.72	15.32	16.23	15.96
14 ,, ..	May	5.89	3.88	3.78	3.54	17.16	14.80	14.27	15.45
15 ,, ..	June	5.88	2.78	3.11	3.91	15.64	12.77	12.88	15.59

B.41227 was the only variety that did not arrow in this experiment.

Counts of millable cane made during the first week of November at eight months age, shewed that 94% of the stalks had arrowed in the case of D.158/41, 28% in B.37161 and 6% in D.37/45. The corresponding percentages of flagging stalks were D.158/41, nil; B.37161, 5% and D.37/45, 3%.

Counts were again made at the end of March at twelve months age. At this age, all the millable stalks of D.158/41 had arrowed, 81% of those of D.37/45 and 59% of those of B.37161.

During the period January-April, the rainfall was only 29% of the average for this time of year. This dry period was followed by a normal rainfall of twelve inches in May and a June rainfall of 8.91 inches which was 40% below the average for this month.

Under the climatic conditions that prevailed in this experiment, B.41227 behaved differently from the three arrowing varieties, in that it continued to ripen and produced increased yields up to fourteen months age. At this age, the heavy May rains produced a marked fall in Pol. % Cane but the yield of sugar at fifteen months age was approximately the same as that at fourteen months.

B.37161 which had arrowed moderately heavily at twelve months age attained its maximum yield at this age. Yields fell steadily thereafter with a marked fall following the onset of the heavy May rains.

The yield curve of D.37/45 which had also arrowed heavily followed the same pattern as that of B.37161 except that the fall commenced more rapidly once maturity in the primary stalk population had been attained.

In respect to yield, D.158/41 followed B.37161 closely. This variety attained its maximum yield at twelve months age with yields falling thereafter to fourteen months age. At fifteen months age there was a tendency for yields to commence to improve again.

3. SOPHIA 4 E.

Reaped: April, 1957—October, 1957.

TABLE III.

Age in Months.	Month of Reaping.	Tons 96° Sugar per Acre.				Pol. % Cane.			
		B. 41227.	B. 37161.	D. 37/45.	D. 158/41.	B. 41227.	B 37161.	D. 37/45.	D. 158/41
9 Months ..	Apr.	5.60	4.08	5.67	5.12	16.17	15.45	14.59	13.39
11 „ ..	June	5.02	3.57	5.07	5.20	15.04	12.58	13.47	13.58
12 „	July	4.83	3.98	5.97	5.32	15.50	14.75	14.51	15.35
13 „	Aug.	5.03	4.58	6.29	5.47	14.92	14.31	14.69	15.29
15 „	Oct.	4.33	3.52	5.26	5.10	14.85	14.12	14.68	14.45

The *reaping* of this experiment covered the period April-October, *i.e.*, the second half of the Spring dry season, the heavy mid-year rainy season, and the first half of the Autumn dry season.

In this experiment, the yield curve of B.41227 appears to have attained its peak in April-May *i.e.*, from nine to ten months age—a very early age for this variety which appears in general to be a late maturing one.

The early age at which the first and only definite yield peak was obtained in this cycle is to be attributed to the excellent growing conditions which obtained in the relatively wet Autumn of 1956 (the August-December rainfall being 54.92 inches as against an average for these months of 35.91 inches) and which was followed by an abnormally dry Spring ideal for ripening. It is likely that but for the heavy May rainfall, further ripening and increased yields would have been obtained. However, the usual effects of heavy rain resulted in renewed growth with a general fall in yield and in Pol. % Cane.

It is to be noted that while the other three varieties made a recovery in yield over the fifteen month period of the experiment, B.41227 did not do so, again illustrating that this variety tends to respond to changing weather conditions more slowly than the other three.

B.37161 appears to have attained a first yield peak even earlier than B.41227 and to have commenced its fall in yield immediately with the onset of the May rains. Following a June-July period of comparatively moderate rainfall, juice purities and yields again rose but this was followed by a further fall from thirteen months onwards.

D.37/45 also attained a first yield peak at nine to ten months age which was followed by a sharp fall with the commencement of the May rains. Like B.37161, this variety also increased its yields and Pol. % Cane between eleven and thirteen months age when a second yield peak was reached, yields falling again thereafter.

The yields of D.158/41 shew comparatively little variation throughout the period, again illustrating that in the absence of arrowing this variety is not an early maturing one and like B.41227 does not react as rapidly to climatic conditions as does B.37161 and D.37/45.

SUMMARY.

These experiments continue to yield interesting data. While certain general responses to climatic conditions are observable, it is equally apparent that the varieties selected for these experiments possess inherent individual characteristics which determine the degree to which they respond to such conditions.

The factors which influence the yield of a given variety, are:—

(i). Age of the cane at time of reaping.

(ii). The variability in the relative number and growth rates of the various categories of stalks—primaries, secondaries, etc.

(iii). The age at which arrowing occurs and its degree.

(iv). The rapidity with which growth decreases or is renewed, etc.

These factors in conjunction with the wide range in the distribution and amount of rainfall, result in a perplexing number of inter-relationships between the crop and its environment. It follows that concordance of a high order is unlikely between the factors concerned where only a few experiments are considered and a wider range of data require to be collected and analysed in order to fully evaluate the relative importance of the various factors which affect yield and quality.

3. FERTILIZER EXPERIMENTS, 1957.

BY

L. S. BIRKETT, C. CAMERON AND H. PAUL*.

The fertilizer experiments reaped in 1957 consisted of five experiments on liming, three experiments to test the relative value of different forms of (a), nitrogen, and (b), phosphate, and two experiments to determine whether different cane varieties possess different nitrogen requirements.

(i.) LIMING EXPERIMENTS.

Of the five experiments involving applications of limestone which were reaped in 1957, four were first ratoons from the experiments reaped as plants in 1957. The rates of application of limestone in the plant cane experiment were the same as those in the other experiments namely, three, six and nine tons per acre. In the first ratoon experiments no additional applications of limestone were made and the liming rates referred to in this cycle are those originally applied to the plant cane crop.

Nitrogen as sulphate of ammonia, was applied to the plant cane experiment at the rate of 94 lbs. nitrogen per acre, but the ratoons in all cases received 141 lbs. of nitrogen per acre to all plots.

Since one of the major benefits derived from liming local soils is its effect in increasing the availability of soil phosphate, in three of the five experiments provision was made to compare the increase in the availability of natural soil phosphates resulting from liming, with that obtained from applications of single calcium superphosphate at the rate of 6 cwt. per acre. In this connection, the phosphate uptake from, (i), continued annual applications at this rate, and (ii), from a single application to the plant cane crop, are under study.

YIELD DATA.

The yields of 96° sugar per acre for the various treatments in the five experiments reaped in 1957 are presented in Table I. The leaf and juice analyses are presented in Table II.

DISCUSSION OF RESULTS.

Sophia, 1 W. Plant Cane, B.41227. Soil Type: Blairmont Clay.

In this experiment, liming has resulted in an increase in yield which however, is not statistically significant. No increase in yield appears to result from the application of calcium superphosphate. Since the level of leaf and juice phosphate, even in the control plots, is particularly high this is understandable and the benefits from liming cannot in this experiment, be attributed to its effect in rendering soil phosphates more available.

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TABLE I.

EXPERIMENTS ON LIMING, 1957.

Experiment.	Soil Type.	Cane Variety.	Cycle.	TONS 96° SUGAR PER ACRE.					
				Control.	L_3.	L_6.	L_9.	P_6.	P_6R.
Sophia — 1 W.	Blairmont Clay.	B.41227	Plants	7.80	8.49	8.50	9.34	8.10	7.89
Sophia — 16 W.	Blairmont Loam.	„	1 R.	5.11	5.41	5.03	4.98	—	—
Sophia — 8 W.	Blairmont Clay.	„	„	6.01	6.21	6.48	6.67	—	—
Sophia — 8 E.	Blairmont Clay.	„	„	5.39	5.73	6.32	5.78	5.29	5.27
Diamond— 94 G.D.	Pegassy Clay	B. 37161	„	2.69	3.12	3.32	3.27	3.18	2.88

TABLE II.

GEN % LEAF D.M.			K_2O % LEAF D.M.						P_2O_5 % LEAF D.M.						P_2O_5 % JUICE.					
L_3.	L_6.	L_9.	Control.	L_3.	L_6.	L_9.	P_6.	P_6R.	Control.	L_3.	L_6.	L_9.	P_6.	P_6R.	Control.	L_3.	L_6.	L_9.	P_6.	P_6R.
2.16	2.12	2.19	1.14	1.14	1.15	1.21	1.27	1.21	.77	.91	.84	.84	.83	.86	.050	.054	.056	.052	.054	.051
1.63	1.66	1.51	1.42	1.51	1.52	1.54	—	—	.46	.45	.51	.40	—	—	.037	.049	.056	.058	—	—
1.82	1.79	1.75	1.36	1.45	1.45	1.39	—	—	.43	.51	.48	.49	—	—	.047	.049	.051	.055	—	—
2.06	2.07	2.11	1.39	1.42	1.45	1.48	1.48	1.45	.52	.49	.48	.54	.57	.54	.036	.038	.040	.044	.049	.046
1.79	1.73	1.80	1.18	1.18	1.28	1.25	1.31	1.25	.40	.40	.51	.45	.50	.44	.036	.040	.042	.043	.047	.044

Control = No limestone. L_3, L_6 and L_9 = Limestone applications to the Plant cane crop at rates of 3, 6 and 9 tons per acre.
P_6 and P_6R. — Applications of 6 cwt. Single Calcium Superphosphate per Acre to all cycles, and to Plant Cane crop only, respectively.

Leaf analyses shew that potash % leaf dry matter is below the critical level in all treatments and that the levels of this nutrient are not raised appreciably by liming in this experiment. It is possible however, that the yield increases shown from liming are attributable to some increase in the availability of soil potash which would be noticeable at a later sampling date.

Sophia, 16 W. First Ratoons, B.41227. Soil Type: Blairmont Loam.

The limestone applied to the plant cane crop has continued to give residual increases in yields in the first ratoons at the L_3 level which however are not statistically significant. As in the plant cane cycle, yields are slightly depressed at the L_6 and L_9 levels of liming in this soil.

The first ratoon yields are satisfactory for this soil type although the nitrogen % leaf dry matter at twelve weeks age was considerably below the optimum levels for maximum yields. It is believed that this low nitrogen level in the leaf was the result of the dry weather experienced for the three weeks prior to the date of leaf sampling and was not necessarily the result of a basically inadequate level of soil nitrogen.

The potash % leaf dry matter was slightly above the accepted critical value while the phosphate level was about the critical level. The level of juice phosphate however, was well above the critical value for B.41227 and it would appear that phosphate was not deficient in this experiment.

It should be noted that the leaf and juice analyses in the first ratoon crop are very similar to those of the plant cane crop except that the effect of liming in increasing the availability of soil phosphate is more pronounced in this cycle when judged on the basis of the level of phosphate in juice.

Sophia, 8 W. First Ratoons, B.41227. Soil Type: Blairmont Clay.

The first ratoon yields are normal for this soil and indicate a steady increase in yields with increase in the rate of liming. These increases are not however, statistically significant.

Leaf analyses indicate that in this experiment also, the nitrogen % leaf dry matter is below the level considered necessary for optimum yields. Leaf potash and phosphate are approximately at the critical values for these nutrients. The phosphate level in the juice is again well above the critical level. The increase in the level of P_2O_5 % juice with increase in the rate of liming is again to be observed.

Sophia, 8 E. First Ratoons, B.41227. Soil Type: Blairmont Clay.

As in the plant cane crop, there is an increase in yield from liming which however, is not statistically significant.

The nitrogen % leaf dry matter is somewhat below the optimum value.

The phosphate % leaf dry matter is satisfactory while the P_2O_5 % juice is well above the critical value.

In this experiment, the potash % leaf dry matter is slightly below the critical level in the control plots but is raised to approximately the critical

0.66 4.70 5.07 4.78 4.50 3.85 3.29 71. rogen/ ugar p IA, 10 G.G. EX

level by liming and at first glance it might be thought that this would account for such increases in yield as are recorded. However, the potash content of the leaf is also raised to the approximate critical level in the plots receiving phosphate but no limestone, without this producing any yield increases. It is concluded therefore, that the yield increases from liming in this experiment are not attributable to the increased uptake of phosphate or potash which results from liming but must be due to some other action on the part of the lime.

Diamond, 94 G.D. First Ratoons, B.37161. Soil Type: Pegassy Clay.

The yields from the first ratoon crop were very low but yields were markedly increased by liming although the plot to plot variation was so great in this experiment that these increases could not be shewn to be statistically significant.

In contrast to the plant cane crop where satisfactory values for nitrogen % leaf dry matter were recorded, the nitrogen levels at time of sampling in the first ratoons were low in spite of the rate of application of nitrogen being high i.e. 141 lbs. nitrogen per acre. This result might well have been due to the dry weather which preceded sampling, only 2.74 inches of rain having fallen in the four weeks prior thereto. It is worthy of note however, that the nitrogen content of the leaves from the limed plots is approximately 12 per cent higher than those of the unlimed.

As in the plant cane cycle, the potash % leaf dry matter was low and was not raised to a satisfactory level by liming although liming did result in some increase in the uptake of potash.

In contrast to the plant cane data, where phosphate % leaf dry matter was at a satisfactory level, the phosphate levels in ratoons were below the critical level in the control plots, attaining approximately the critical level in the L_6, L_9 and P_6, P_6R treatments. Since however, the P_2O_5 % juice was considerably above the critical levels, it is likely that the main response to liming is a potash response and to the supplying of calcium as a nutrient, or to the reduction in soil acidity.

(ii). RELATIVE VALUES OF VARIOUS NITROGEN AND PHOSPHATE FERTILIZERS.

(a) **Nitrogen.** The experiment (So. 16 W.) designed to test the relative values of Ammonium Sulphate, Ammonium Chloride, Ammonium Nitrate, Di-Ammonium Phosphate and Urea, which was reaped as plants in 1956 was continued and reaped as first ratoons in 1957. The treatments and rates of application of the various nitrogen-supplying fertilizers and of phosphate were the same as before.

YIELD DATA.

The yields of 96° sugar per acre and the P_2O_5 content of the juices for the various treatments are presented in Table III.

TABLE III.

Treatment.	Tons 96° Sugar per Acre.	P_2O_5 % Juice.
Control (No fertilizers applied)	2.51	.061
Ammonium Chloride + Calcium Superphosphate	5.56	.056
Urea + Calcium Superphosphate	5.84	.056
Ammonium Nitrate + Calcium Superphosphate	5.89	.060
Ammonium Sulphate + Calcium Superphosphate	5.90	.050
Ammonium Sulphate	5.93	.044
Di-Ammonium Phosphate	6.01	.058

DISCUSSION OF RESULTS.

As in the plant cane crop, there is a very significant response to an application of 141 lbs. of nitrogen per acre but no response to phosphate. Again also, there are no significant yield differences between the various sources of nitrogen.

It has been established that the application of nitrogen depresses the uptake of phosphate by the cane plant. The data for this experiment to date suggests that in so far as inorganic nitrogen fertilizers are concerned, the nitrate ion depresses the uptake of phosphate to a less extent than does the chloride or sulphate ion.

(b). **Phosphate.** Two experiments to determine the relative values of different phosphate fertilizers as sources of phosphate for sugar cane under local conditions were reaped in 1957. One of these experiments was laid down on an intermediate pegassy clay at Diamond Estate (25 G.G.—E.) and the first reaping as plants has been reported in Sugar Bulletin No. 25, p.p. 65—66. The first ratoon crop which received the same fertilizer treatments as the plant cane crop was reaped in 1957 and the data for mean yields and phosphate uptake are presented in Table IV. The other experiment of this type was laid down at the Sugar Experiment Station on a Blairmont Clay and this was reaped as plants in 1957. The data are also presented in Table IV.

In the experiment at Diamond Estate, B.37161 was the indicator variety while B.41227 was planted in the experiment at the Sugar Experiment Station (So. 11 E.).

In each experiment all plots received 141 lbs. of nitrogen per acre in the form of ammonium sulphate, while the application of the phosphatic fertilizers was at rates giving 125 lbs. P_2O_5 per acre.

YIELD DATA.

The yield data for the two experiments are given in Table IV in which are also tabulated the mean P_2O_5 % Juice and the lbs. P_2O_5 per acre in Juice for the various treatments.

DISCUSSION OF RESULTS.

Diamond, G.G. 25 E. First Ratoons, B.37161. Soil Type: Intermediate Pegassy Clay.

There were no statistically significant differences in yields between the various treatments although the site of the experiment was believed by the estate authorities to be deficient in phosphate. It is probable that the overall

TABLE IV.

EXPERIMENTS ON THE RELATIVE VALUES OF VARIOUS PHOSPHATE FERTILIZERS, 1957.

DIAMOND, G.G. 25 E. First Ratoons, B. 37161.				SOPHIA, 11 E. Plant Cane, B. 41227.			
Phosphatic Fertilizer.	Tons 96° Sugar per Acre.	P_2O_5 % Juice.	Lbs. P_2O_5 per Acre in Juice.	Phosphatic Fertilizer.	Tons 96° Sugar per Acre.	P_2O_5 % Juice.	Lbs. P_2O_5 per Acre in Juice.
Dicalcium Phosphate	4.89	.015	11.4	Dicalcium Phosphate	7.72	.029	31.9
Control (No Phosphate) ..	5.10	.012	9.2	Control (No Phosphate) ..	7.91	.024	27.1
Basic Slag	5.15	.016	12.5	Reno Rock Phosphate	7.93	.026	28.8
Ground Rock Phosphate.. ..	5.15	.015	11.8	Basic Slag	8.04	.027	30.9
Reno Rock Phosphate	5.38	.015	12.0	*Calcium Superphosphate ..	8.12	.030	33.2
*Calcium Superphosphate ..	5.42	.016	13.2				

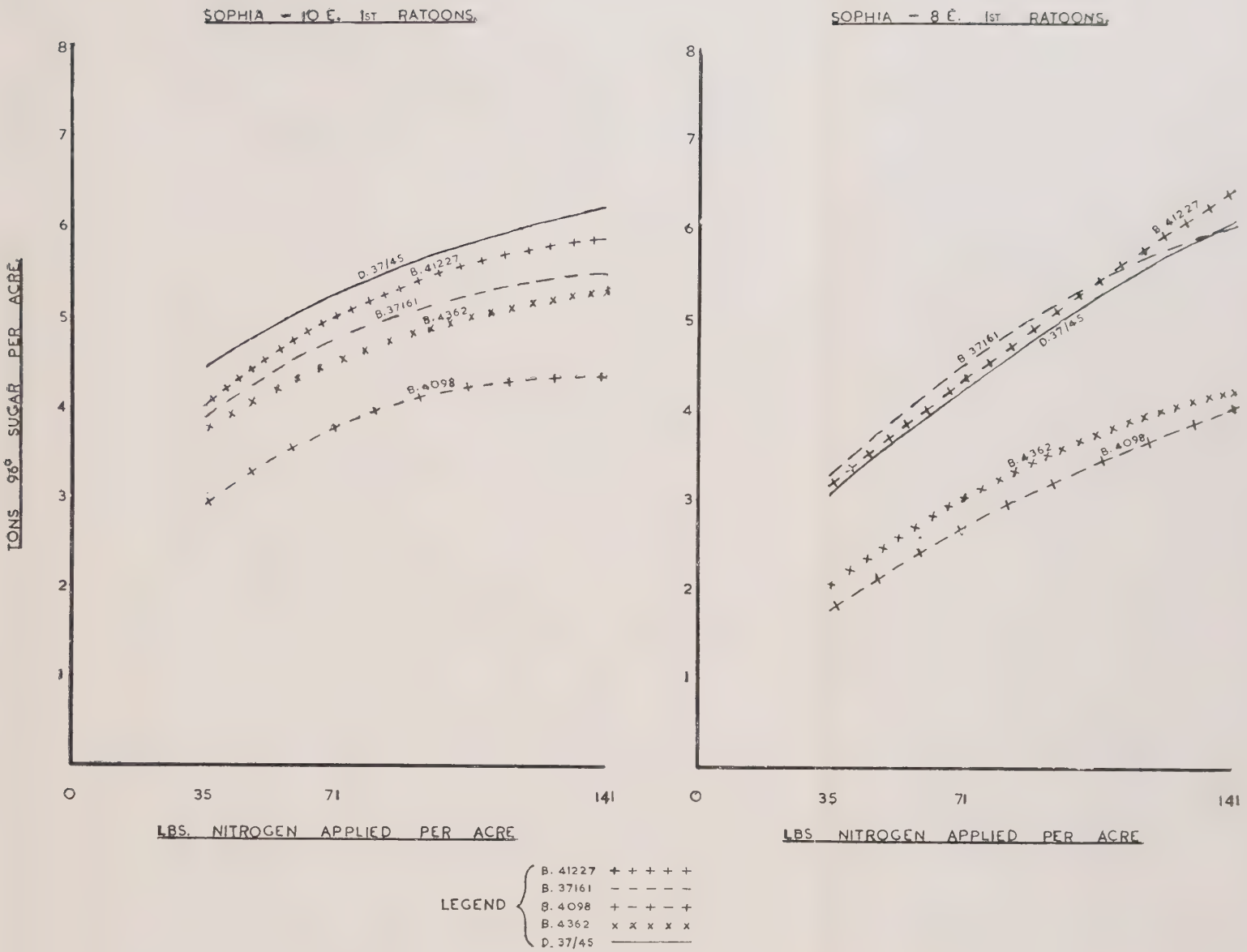
* Single Calcium Superphosphate.

TABLE V.

VARIETY — FERTILIZER EXPERIMENTS, 1957.

SOPHIA, 10 E. First Ratoons.							SOPHIA, 8 E. First Ratoons.						
Cane Variety.	Tons 96° Sugar per Acre.			Pol. % Cane.			Cane Variety.	Tons 96° Sugar per Acre.			Pol. % Cane.		
	Lbs. Nitrogen/Acre.			Lbs. Nitrogen/Acre.				Lbs. Nitrogen/Acre.			Lbs. Nitrogen/Acre.		
	35.	71.	141.	35.	71.	141.		35.	71.	141.	35.	71.	141.
B. 41227	4.01	5.07	5.88	15.36	15.88	14.74	B. 41227	3.16	4.37	6.49	14.66	15.53	15.39
B. 37161	3.90	4.78	5.57	15.85	16.42	15.24	B. 37161	3.27	4.53	6.06	15.26	14.98	15.42
B. 4362	3.82	4.50	5.38	15.97	16.55	15.80	B. 4362	2.04	3.06	4.22	14.75	14.89	15.53
B. 4098	2.97	3.85	4.33	15.27	15.17	14.91	B. 4098	1.78	2.52	4.04	14.31	15.34	15.02
D. 37/45	4.46	5.29	6.26	15.33	15.11	14.83	D. 37/45	3.09	4.32	6.11	14.43	15.31	15.52
Means	3.83	4.70	5.48	15.56	15.83	15.10	Means	2.67	3.76	5.38	14.68	15.21	15.38
Significant Difference	0.66			0.89			Significant Difference	0.74			Nil		

FIGURE I


SOPHIA – 10 E. 1ST RATOONS.
SOPHIA – 8 E. 1ST RATOONS.
TONS 96° SUGAR PER ACRE.
8
7
6
5
4
3
2
1
0
35
71
141
D. 37/45
B. 41227
B. 37161
B. 4362
B. 4098
LBS. NITROGEN APPLIED PER ACRE
LEGEND
B. 41227
B. 37161
B. 4098
B. 4362
D. 37/45

application of limestone at the rate of three tons per acre to this field prior to planting was responsible for increasing the availability of soil phosphate. However, the recovery of applied phosphate was again low, in fact lower than in the plant cane crop, and this may be partly due to the low rainfall of 1957. It is also partly attributable to the low pH of this soil.

As in the plant cane cycle, the various phosphatic fertilizers, judged from the P_2O_5 % Juice and from the lbs. P_2O_5 per acre in the juice of the cane, are equally satisfactory sources of phosphate on this soil type.

Sophia, 11 E. Plant Cane, B.41227. Soil Type: Blairmont Clay.

In this experiment also, there was no significant response to phosphate (as would be anticipated from the adequate level of juice phosphate). However, the availability of the type of phosphate supplied to the cane plant is evaluated from the data for P_2O_5 % Juice and the lbs. P_2O_5 per acre in the juice of the cane.

It will be noted that in this experiment also, the recovery of applied phosphate is low and that there are no significant differences between the various phosphatic fertilizers as sources of phosphate on this soil.

(iii). VARIETY-FERTILIZER EXPERIMENTS

The two experiments of this type which were reaped as plants in 1956 (Bulletin No. 25, pp. 66—70) were continued and reaped as First Ratoons in 1957.

The rates of nitrogen applied to the first ratoons were, 35, 71 and 141 lbs. nitrogen per acre, corresponding to 1½, 3 and 6 cwt. of sulphate of ammonia per acre and designated as $N_{1.5}$, N_3 and N_6 rates respectively in the text. These rates differ from those of the plant cane crop in that there was no control, i.e. N_0 level.

YIELD DATA.

The yields in terms of 96° sugar and the mean Pol. % Cane for the various treatments and cane varieties obtained from the two experiments of this series are presented in Table V. The yields are also presented graphically in Figure I.

DISCUSSION OF RESULTS

Sophia, 10 E. First Ratoons. Soil Type: Blairmont Clay.

From the data presented in Table V, it is seen that by increasing the rate of application of nitrogen from 35 lbs. nitrogen per acre to 71 lbs. per acre there is obtained an increase in 96° sugar per acre which is statistically significant for each variety. By further increasing the nitrogen application from 71 to 141 lbs. per acre, a further increase in 96° sugar per acre is obtained which is also significant for all varieties except B.4098, for which however, the increase obtained is not far short of significance.

At the 35 lbs. per acre rate of applied nitrogen, the only statistically significant differences in yield between varieties is the margin by which B.4098 is outyielded by the other varieties.

At the N_3 level, B.4098 is again outyielded by all the other varieties by statistically significant amounts, while B.4362 is similarly outyielded by D.37/45 at this level.

At the N_6 level, B.4098 is again outyielded significantly by all varieties, while B.4362 is again also outyielded significantly by D.37/45 at this rate of application.

The Pol. % Cane data shew B.41227, B.37161 and B.4362 to behave similarly, in that the Pol. % Cane rises to a maximum value somewhere near the N_3 level of applied nitrogen. In the other two varieties, the Pol. % Cane falls progressively with increase in the amount of nitrogen applied.

The increase in the Pol. % Cane with increase in the rate of nitrogen from 35 to 71 lbs. per acre is in no case significant. However, significant *decreases* in Pol. % Cane occur in B.41227 and B.37161 when the rate of application of nitrogen is increased from 71 to 141 lbs. of nitrogen per acre.

There are no significant differences in Pol. % Cane as between varieties at the 35 lbs. nitrogen per acre rate of application, but at the 71 lbs. per acre rate, the Pol. % Cane of B.4362 and B.37161 are significantly higher than that of D.37/45 and B.4098, while at the highest rate of application of nitrogen, the Pol. % Cane of B.4362 is significantly higher than that of D.37/45.

Sophia, 8 E. First Ratoons. Soil Type : Blairmont Clay.

It will be seen from Table V, that statistically significant yield increases are obtained for each variety from increases in the rate of application of nitrogen from 35 to 71 lbs. per acre and also from 71 to 141 lbs. of nitrogen per acre.

In the yield differences between varieties, B.4098 and B.4362 are both outyielded by statistically significant amounts by B.41227, B.37161 and D.37/45 at each of the three rates of application of nitrogen. The differences in yields between B.41227, B.37161 and D.37/45 are in no case significant.

In this experiment the differences in the Pol. % Cane are not significant.

SUMMARY OF FERTILIZER EXPERIMENTS.

(i). Liming Experiments.

As in the experiments reaped in the previous year, applications of limestone have in most cases resulted in increased yields, which however, have not been statistically significant.

The evidence obtained to date suggests that while liming increases to some extent the availability of soil supplies of phosphate and potash and that this will account for part of the increases obtained where potash and phosphate are deficient, it does not account for the consistent (although statistically insignificant) increases that occur where phosphate and potash appear to be adequate. Such yield increases might be due to the lime supplying Calcium as a nutrient, to reducing the level of Magnesium and Manganese where these are too high, or, as has been suggested by Evans et al[1] to reducing the absorption of Iron when present in toxic concentrations.

The data available at present, suggest that an application of 6 cwt. per acre of single calcium superphosphate is slightly more effective in increasing the phosphate uptake by the cane plant than does liming at the rates used in these experiments. The mean levels of P_2O_5 % leaf dry matter and of P_2O_5 % Juice for the various treatments in experiments in which phosphate and lime have been applied separately, are as follows:

	Treatment				
	L_0	L_3	L_6	L_9	P_6
Mean P_2O_5 % Leaf D.M.	.52	.56	.57	.57	.58
Mean P_2O_5 % Juice	.039	.042	.043	.044	.048

(ii). Relative Values of Various Nitrogen and Phosphate Fertilizers.

The experiment in which the nitrogen fertilizers, Urea, Ammonium Chloride, Ammonium Nitrate, Di-Ammonium Phosphate and Ammonium Sulphate are compared, was reaped as First Ratoons in 1957. As in the Plant Cane crop, there was a statistically significant response to the application of 141 lbs. nitrogen per acre but no significant differences in yields between the various sources of nitrogen.

The two experiments with different phosphatic fertilizers have also indicated that any differences between the fertilizers used in these tests are not statistically significant.*

(iii). Variety-Fertilizer Experiments.

These experiments were designed to test whether different cane varieties possess different nitrogen requirements.

The data obtained to date is not clear-cut but it appears that cane varieties are likely to respond differently relative to each other at different levels of applied nitrogen. However, these relationships also tend to vary somewhat with climatic and soil conditions.

In general, it appears that B.41227, B.37161 and D.37/45 are capable of utilising larger quantities of nitrogen than are B.4362 and B.4098, since the nitrogen-yield curves for the three former varieties are steep in both experiments at each cycle.

It also appears that the present commercial varieties possess a higher nitrogen requirement than those of the past.

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* A series of experiments by Evans[2], using Triple Superphosphate and Ground Rock Phosphate have shewn that the yield response curve for Triple Superphosphate is consistently higher than that of the Ground Rock Phosphate and it is thought that although the differences are not statistically significant, they are nevertheless real.

ACKNOWLEDGEMENTS.

In conclusion, the authors would like to acknowledge the ready help given by Dr. H. Evans in having the leaf potash analyses recorded in this paper carried out at his laboratory.

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4. CULTIVATION EXPERIMENTS

BY

L. S. BIRKETT and C. CAMERON.

The first cycle of an experiment designed to compare the Cameron—Williams method of cultivation with the standard estate method of hand cultivation has been completed and the results reported and discussed in previous Bulletins [1,2]. It was noted that the full benefits of the former method of cultivation are not realisable in their entirety during the first cycle owing to the fact that only part of the area to be cultivated to a depth of two feet has been so treated and to the possible ill effects of saline subsoil from the second foot having been brought to the surface. It is anticipated that under the combined action of flood-fallowing and rainfall, any excess of salts brought to the surface with the subsoil would be quickly washed out and while considerations of costs may prevent the adoption of the Cameron-Williams method as such in estate practice, it is possible that a mechanised procedure similar to it may be feasible if it can be shewn that cultivation to a depth of two feet has economic advantages. Accordingly, this experiment is being continued to obtain data on these aspects.

As in the first cycle of the experiment, a fertilizer trial has been superimposed on the area of the cultivation experiment. Except that B.47258 has replaced D.142/41, the varieties planted are the same as in the first cycle.

The data for the Plant cane crop reaped in 1957 are presented in Table I.

TABLE I.

Cane Variety.	Standard Estate Method.			Cameron-Williams Method.		
	Tons 96° Sugar per Acre.	Juice Purity.	Tons Cane per ton 96° Sugar.	Tons 96° Sugar per Acre.	Juice Purity.	Tons Cane per ton 96° Sugar.
B.4098 ..	6.85	84.6	8.49	7.31	85.3	8.07
D.158/41 ..	5.91	82.7	9.15	6.38	83.0	8.94
B.47258 ..	5.71	82.9	8.61	7.92	85.0	7.45
D.62/43 ..	5.06	81.1	9.53	6.49	84.8	7.95
B.34104 ..	4.86	86.2	8.66	6.67	87.4	8.17
B.41227 ..	4.83	86.2	7.95	6.49	87.1	6.49
B.37161 ..	3.61	83.0	9.58	4.63	84.4	9.12
Means. ..	5.26	83.8	8.85	6.56	85.3	8.03

The data in Table I shew that for each variety, the yield of 96° sugar per acre and the juice purity are higher in the Cameron-Williams method than in the Standard Estate method of hand cultivation. Also, that for each variety the tons cane required to produce a ton of 96° sugar is less with the Cameron-Williams method of cultivation.

The results duplicate those of the first cycle in so far as yield is concerned. However, in the first cycle of the experiment the purity of the juice was less, and the tons of cane required to produce a ton of sugar greater in the Cameron-Williams method.

The rainfall during the period of growth of the plant crop reaped in 1957 was 68.57 inches which is appreciably below average. Supplementary irrigations were however, given from time to time as required.

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TABLE I (A).—Weighted Mean Commercial Yields in East Demerara, 1957.

Variety.	Acres Harvested.	Crusher Juice. Pol. %	Crusher Juice. Purity.	Tons 96° Sugar per Acre.*
		Plant 100 Acres	*Canes. and over.*	
B. 41227	2,214.3	15.04	82.59	4.41
B. 37161	861.2	15.20	83.28	4.29
B. 47258	159.2	15.74	82.72	4.24
B. 47225	121.5	15.36	83.45	3.20
		Under 100	*Acres.*	
N.C.O. 330	10.2	16.35	84.28	5.61
B. 43253	10.0	15.96	82.52	4.84
B. 48372	16.8	15.64	81.40	4.74
Pindar	42.6	14.86	83.67	4.01
Mixed	8.1	14.85	83.72	3.95
Trojan	2.0	14.96	80.86	3.60
B. 4362	24.0	14.83	83.32	1.88
		First 100 Acres	*Ratoons. and over.*	
B. 37161	1,052.3	15.04	82.46	4.09
B. 47258	106.4	14.60	80.28	4.09
B. 4373	130.4	14.75	81.74	3.95
B. 41227	999.4	15.04	81.65	3.91
B. 47225	691.6	15.06	83.15	3.80
Pindar	546.8	14.83	82.61	3.74
B. 47379	243.7	13.99	81.29	3.40
B. 40102	118.8	13.59	80.16	2.92
		Under 100	*Acres.*	
M. 423/41	2.3	13.34	77.88	4.35
D. 37/45	37.9	14.29	80.44	4.30
M. 213/40	4.5	12.50	75.90	4.00
N.C.O. 330	2.6	13.89	79.88	3.92
B. 46378	18.6	14.48	80.82	3.82
B. 48372	5.5	13.30	78.15	3.65
Trojan	1.7	13.62	80.76	3.59
B. 43253	5.5	14.64	81.72	3.29
Co. 413	.7	13.70	79.56	3.14
Eros	30.8	16.76	85.22	3.07
N.C.O. 310	27.0	13.72	80.45	2.90
M. 134/32	4.2	13.52	80.09	2.86
P.O.J. 3016	3.6	16.48	85.17	2.81
Mixed	7.3	15.52	83.89	2.74
P.O.J. 2967	22.8	15.34	84.10	2.73
B. 4362	24.7	14.48	82.75	2.52
M. 112/34	7.0	13.64	79.26	2.16
Pepecuca	.5	13.70	79.56	2.00
H. 37-1933	3.2	14.05	83.39	1.88
Comus	4.8	14.83	82.76	1.69
		Second 100 Acres	*Ratoons. and over.*	
B. 41227	1,280.9	15.19	83.12	3.58
B. 47225	215.3	15.27	83.22	3.43
B. 4362	697.3	15.04	83.36	3.09
B. 37161	1,934.8	15.36	83.38	3.06
Pindar	108.2	15.14	81.62	2.96
		Under 100	*Acres.*	
B. 43253	.3	16.83	83.65	6.67
D. 37/45	9.3	16.24	83.75	4.52
Comus	.8	16.23	83.62	3.87
B. 4373	21.0	15.47	83.11	3.66
B. 4098	23.0	14.57	82.87	3.48
B. 46378	26.2	15.40	82.18	3.48
B. 40105	94.1	16.51	86.03	3.46
B. 47258	3.0	16.25	82.90	3.43
Co. 419	20.7	13.59	82.07	3.33
B. 47379	21.8	14.92	82.11	3.85
Mixed	15.7	14.01	81.41	2.42
P.O.J. 2967	.5	12.68	80.56	2.00
		Third 100 Acres	*Ratoons. and over.*	
B. 4098	323.4	15.04	82.73	3.23
B. 37161	665.8	14.94	82.70	3.19
B. 41227	1,635.2	14.72	83.03	3.18
B. 4362	361.3	15.18	82.19	2.79
		Under 100	*Acres.*	
B. 40105	11.5	17.98	85.70	3.83
D. 37/45	13.7	15.47	83.78	3.67
B. 43413	20.0	14.64	80.75	3.40
Co. 419	34.8	14.33	83.22	2.90
B. 46378	2.5	14.33	81.70	2.80
B. 34104	15.8	16.87	85.42	2.80
B. 44841	15.3	15.18	82.05	2.76
B. 47225	.9	13.97	80.10	2.22
B. 4373	.5	13.81	77.93	2.00

TABLE I (B).—**Weighted Mean Commercial Yields in West Demerara, 1957.**

Variety.	Acres Harvested.	Crusher Juice. Pol. %	Crusher Juice. Purity.	Tons 96° Sugar per Acre*.
		Plant Canes.		
		100 Acres and over.		
B. 41227	1,087.3	15.23	84.34	4.15
B. 37161	1,210.0	15.52	84.15	4.08
B. 4362	263.8	14.27	82.53	4.08
		Under 100 Acres.		
B. 45137	1.2	16.50	84.67	8.75
B. 47258	26.5	15.41	82.54	4.79
B. 4744	25.5	15.13	84.43	4.39
B. 47225	81.5	14.97	82.67	3.85
B. 47379	2.0	15.92	83.48	3.55
Pindar	7.7	15.46	83.02	3.47
B. 4098	5.5	15.42	84.05	3.45
B. 48372	4.8	15.60	82.05	3.23
B. 49119	7.5	15.70	83.80	3.20
B. 50135	2.0	16.18	83.96	3.15
B. 47262	1.0	16.40	84.27	2.80
Mixed	12.6	15.66	84.12	2.77
		First Ratoons.		
		100 Acres and over.		
B. 41227	582.3	15.44	83.75	4.05
B. 4098	114.2	14.58	81.57	3.39
B. 37161	1,654.7	15.35	84.38	3.31
B. 47225	667.0	15.54	84.64	3.25
		Under 100 Acres.		
B. 47258	82.8	15.17	84.27	3.90
B. 4362	37.5	16.34	85.82	3.89
B. 48372	22.3	14.90	84.38	3.78
B. 46378	45.7	15.19	84.66	3.65
B. 4744	3.4	14.67	84.10	3.53
Mixed	9.6	16.13	83.02	3.40
Pindar	55.0	16.04	85.09	3.37
D. 37/45	3.3	14.67	84.10	3.33
B. 47379	67.8	15.56	83.82	3.30
B. 4373	17.3	15.22	83.82	3.17
N.C.O. 310	19.1	14.72	82.91	2.12
Trojan	5.5	15.80	84.00	2.02
H. 32-1063	.3	15.80	84.00	1.67
		Second Ratoons.		
		100 Acres and over.		
B. 41227	270.4	15.67	84.29	3.39
B. 4098	159.3	15.45	84.65	3.27
B. 37161	1,581.7	15.36	84.25	3.15
B. 4362	390.6	15.45	83.75	3.12
B. 47225	452.5	15.43	84.21	3.11
		Under 100 Acres.		
P.O.J. 2967	3.8	15.48	80.21	4.68
B. 4744	15.0	16.45	82.43	4.20
B. 48372	7.3	14.31	80.53	3.79
Mixed	54.0	15.54	83.26	3.43
B. 47258	24.0	15.60	82.50	3.37
Eros	5.0	15.53	82.17	3.34
Pindar	15.5	15.80	83.52	3.11
Comus	1.2	15.77	82.44	2.83
B. 46378	16.0	15.23	83.56	2.70
P.O.J. 3016	1.3	14.95	80.91	2.69
M. 112/34	6.5	14.91	81.03	2.63
M. 134/32	11.8	14.62	79.89	2.09
		Third Ratoons.		
		100 Acres and over.		
B. 41227	464.1	15.72	85.06	3.39
B. 4098	161.4	15.29	84.58	3.33
B. 4362	434.8	15.38	83.57	3.16
B. 37161	732.7	15.62	84.55	3.00
		Under 100 Acres.		
B. 47379	1.2	15.99	83.70	6.08
D. 37/45	4.4	15.69	88.15	4.50
Mixed	33.3	15.74	83.97	3.68
B. 47225	76.3	15.75	84.60	2.97
Pindar	1.2	14.89	81.71	1.83
		Old Ratoons.		
		100 Acres and over.		
B. 41227	539.2	15.27	83.99	3.66
B. 37161	350.9	15.20	83.53	2.99
		Under 100 Acres.		
B. 4362	25.2	14.85	81.24	3.91
Mixed	6.5	16.66	84.14	3.69
B. 46378	4.0	15.28	82.59	2.93

TABLE 1 (C).—Weighted Mean Commercial Yields along Demerara River Banks, 1957.

Variety.	Acres Harvested.	Crusher Juice. Pol. %	Crusher Juice. Purity.	Tons 96° Sugar per Acre.
		Plant Canes. 100 Acres and Over.		
B. 41227	926.1	15.27	84.18	4.13
B. 47258	424.7	14.85	83.39	4.09
Pindar	310.5	15.79	84.85	3.90
B. 37161	1,915.4	15.77	84.35	3.88
		Under 100 Acres.		
Mixed	2.6	16.46	85.23	5.04
Trojan	2.7	15.02	83.42	4.96
B. 46378	14.1	14.25	82.64	4.59
B. 47379	41.9	13.81	81.32	4.31
B. 47225	76.7	16.46	85.00	4.23
Co. 419	7.2	15.18	83.65	4.06
B. 43413	4.6	13.74	81.56	4.02
B. 4362	49.4	16.63	85.16	3.53
B. 47419	16.0	14.16	83.26	3.06
		First Ratoons. 100 Acres and Over.		
B. 41227	465.4	15.34	83.81	4.01
B. 46378	174.3	14.77	82.38	3.91
B. 47258	159.7	15.23	84.22	3.63
B. 37161	2,973.4	15.25	84.56	3.42
B. 47225	238.1	15.61	85.47	3.37
		Under 100 Acres.		
N.C.O. 330	.2	13.93	82.72	5.00
N.C.O.310	.7	18.98	90.12	4.43
D. 142/41	3.0	15.14	83.67	4.40
M. 423/41	.7	18.98	90.12	4.35
Co. 419	24.2	14.77	82.69	4.26
Pindar	79.8	15.14	85.19	3.99
B. 47419	69.0	15.67	85.03	3.68
B. 4373	2.0	15.39	82.76	3.30
Mixed	9.4	14.96	83,97	3.12
B. 4362	98.8	15.48	83.80	2.96
		Second Ratoons. 100 Acres and over.		
B. 41227	651.8	15.61	85.17	3.31
B. 37161	2,398.5	15.76	85.49	3.26
B. 47225	142.1	14.49	84.20	3.18
B. 4362	206.0	15.50	84,29	3.13
D. 37/45	126.1	15.21	84.71	3.08
B. 4098	406.6	15.63	84.85	3.06
		Under 100 Acres.		
B. 47147	.1	13.92	79.54	10.10
Comus	.7	15.92	85.96	5.86
B. 4373	.2	15.02	83.68	5.00
Mixed	2.2	16.15	86.13	4.45
Co. 419	.5	13.92	79.54	4.20
B. 47258	30.1	15.48	85.78	3.53
Pindar	6.5	15.56	85.82	3.31
D. 14/34	10.0	17.11	84.70	3.00
D. 142/41	35.3	15.12	83.64	2.97
D. 158/41	7.7	14.14	82.58	2.73
B. 46378	63.5	15.50	84.54	2.52
Eros	3.1	15.70	86.26	1.65
B. 47419	1.6	13.92	79.54	1.25
		Third Ratoons. 100 Acres and Over.		
B. 41227	1,192.5	15.05	83.69	3.45
Co. 419	174.5	15.55	84.47	3.38
B. 37161	889.5	15.73	85.16	3.01
B. 4362	289.2	14.93	83.28	2.98
B. 4098	170.2	15.45	84.40	2.92
		Under 100 Acres.		
B. 47147	.1	15.12	80.00	10.20
B. 46378	1.9	15.16	84.50	3.74
D. 158/41	3.0	15.68	86.14	3.73
Mixed	2.0	13.89	85.21	3.55
B. 47419	.6	13.75	82.83	3.33
D. 142/41	19.7	13.91	81.78	2.97
D. 37/45	41.6	14.68	83.63	2.46
B. 47258	2.1	15.27	82.22	2.43
B. 34104	11.2	14.90	83.25	1.92
B. 47225	6.9	15.49	85.99	1.77
		Old Ratoons. 100 Acres and Over.		
C. 419	295.1	14.66	83.13	3.70
B. 41227	1,002.0	15.00	82.82	3.45
B. 37161	1,453.2	15.20	84.15	3.13
		Under 100 Acres.		
D. 62/43	.7	13.59	84.94	4.43
B. 40105	.5	13.23	83.73	4.00
Mixed	10.0	13.93	82.90	3.40

TABLE I (D).—Weighted Mean Commercial Yields in Berbice, 1957.

Variety.	Acres Harvested.	Crusher Juice. Pol. %	Crusher Juice. Purity.	Tons 96° Sugar per Acre.*
		Plant Canes. 100 Acres and over.		
B. 41227	2,740.2	15.05	82.49	4.56
B. 37161	4,373.2	15.02	82.47	4.23
B. 47258	899.6	15.84	82.72	4.02
Pindar	131.4	16.50	84.24	4.01
		Under 100 Acres.		
N.C.O. 310	.8	15.34	83.40	4.75
B. 47379	18.6	14.49	82.70	4.51
B. 49119	17.7	15.66	83.17	4.38
B. 47225	54.0	14.72	84.35	4.37
B. 42231	1.3	18.65	85.70	4.23
B. 45137	19.7	15.03	82.30	4.06
B. 48372	1.0	15.75	82.25	4.00
Mixed	28.2	14.52	81.53	3.98
Trojan	12.7	16.35	82.88	3.85
H. 37-1933	5.8	13.13	79.90	3.59
B. 4362	1.5	12.97	79.57	3.53
N.C.O. 330	10.1	15.67	83.00	3.26
Q. 28	7.5	15.22	79.29	3.20
B. 47179	2.5	13.91	78.50	2.84
		First 100 Acres Ratoons. and over.		
B. 4098	148.7	14.88	82.38	4.45
B. 41227	1,577.8	15.20	81.85	4.07
B. 37161	3,870.3	15.35	82.80	4.05
B. 47225	826.7	15.31	82.91	3.91
B. 47258	122.8	15.08	82.24	3.57
Pindar	422.6	15.63	83.42	3.57
		Under 100 Acres.		
B. 45137	2.2	17.34	83.53	5.64
N.C.O. 310	5.1	15.81	82.15	4.90
Mixed	56.4	15.44	82.75	4.28
B. 46378	24.5	15.72	83.76	4.14
Co. 419	37.6	14.50	82.90	4.06
P.R. 1000	2.2	17.99	84.30	4.05
B. 4373	21.6	15.21	83.28	3.93
B. 46218	4.5	13.95	80.17	3.78
B. 4362	16.5	16.14	83.40	3.51
H. 37-1933	20.8	16.22	81.85	3.50
Eros	50.6	14.46	81.13	3.28
Co. 421	19.7	14.38	79.86	3.28
B. 43253	10.1	15.31	83.11	3.25
M. 112/34	4.9	14.94	79.20	3.22
Comus	.6	14.67	82.40	3.17
M. 134/32	6.0	15.02	81.27	3.05
D. 158/41	6.3	14.25	79.17	3.02
B. 47379	1.9	14.67	82.40	2.84
		Second 100 Acres Ratoons. and over.		
B. 41227	2,422.8	15.26	81.71	3.76
B. 4098	657.5	14.99	82.79	3.76
B. 37161	3,286.2	15.14	82.16	3.71
B. 47225	172.7	15.54	82.85	3.40
B. 4362	290.3	15.72	81.36	3.33
		Under 100 Acres.		
D. 37/45	8.3	15.84	84.00	4.84
B. 40105	7.1	15.75	85.18	4.79
B. 4733	1.1	16.31	80.20	4.65
D. 18/46	2.0	14.16	78.70	4.55
D. 19/46	2.0	14.67	78.90	4.55
D. 158/41	38.0	15.79	82.37	3.89
Eros	2.7	17.04	86.10	3.67
B. 46378	41.3	15.20	81.37	3.60
Mixed	75.1	14.81	81.78	3.47
Pindar	42.6	16.14	82.13	3.33
B. 4373	6.6	15.43	80.90	3.32
B. 34104	28.2	14.82	83.29	3.12
B. 4724	2.0	13.26	75.30	3.05
B. 47258	2.0	14.25	79.88	3.00
B. 43413	1.7	12.82	78.90	2.76
D. 62/43	50.6	11.30	62.29	2.71
		Third 100 Acres Ratoons. and over.		
B. 41227	2,962.5	15.16	82.06	3.56
D. 62/43	111.7	14.96	82.93	3.55
B. 4098	1,024.1	14.87	81.95	3.33
B. 37161	1,188.7	15.46	82.92	3.27
B. 34104	145.1	14.66	81.71	2.80
		Under 100 Acres.		
B. 47225	31.1	15.74	83.36	3.71
Mixed	31.0	15.25	81.42	3.12
B. 46378	16.4	14.96	79.83	3.09
D. 37/45	23.1	14.25	80.74	3.08
Pindar	18.0	15.38	81.95	2.99
B. 4373	2.6	15.26	82.38	2.73
B. 40105	4.4	13.66	78.64	2.73
B. 4362	21.0	13.66	79.23	2.69

TABLE I (E).— **Weighted Mean Commercial Yields under Estate Conditions, 1957.**

Variety.	Acres Harvested.	Crusher Juice. Pol. %	Crusher Juice. Purity.	Tons 96° Sugar Per Acre.*
		Plant Canes. 100 Acres and over.		
D. 62/43	111.7	14.96	82.93	3.55
B. 41227	6,254.3	15.33	83.46	3.42
Co. 419	209.3	14.94	83.84	3.30
B. 4098	1,679.1	15.16	83.41	3.27
B. 37161	3,476.7	15.83	83.83	3.13
B. 47225	115.2	15.24	83.51	3.09
B. 4362	1,107.2	14.79	82.07	2.98
B. 34104	172.1	15.44	83.46	2.74
		Under 100 Acres.		
B. 47147	.1	15.12	80.00	10.20
B. 47379	1.2	15.99	83.70	6.08
B. 40105	15.9	15.82	82.17	3.52
Mixed	66.3	14.96	83.53	3.42
B. 43413	20.0	14.64	80.75	3.40
B. 4744	.6	13.75	82.83	3.33
B. 46378	20.3	14.92	82.01	3.11
D. 37/45	82.8	15.02	84.07	2.94
Pindar	19.2	15.13	81.83	2.92
B. 44341	15.3	15.13	82.05	2.76
B. 4373	3.4	14.27	81.05	2.68
D. 158/41	62.0	15.14	83.59	2.43
B. 47258	2.1	15.27	82.22	2.43
D. 142/41	19.7	13.91	81.78	2.40
		Old Ratoons. 100 Acres and over.		
Co. 419	436.6	14.09	80.00	3.49
B. 41227	3,326.5	15.16	82.94	3.38
B. 37161	2,821.2	15.20	83.44	3.18
B. 34104	131.6	14.85	82.82	2.89
B. 4098	1,031.0	15.07	83.69	2.77
		Under 100 Acres.		
D. 158/41	28.0	14.67	82.29	4.32
D. 37/45	9.0	16.08	82.87	4.29
B. 47225	30.1	14.79	81.76	3.60
B. 40105	20.3	14.12	84.33	3.35
Mixed	47.1	15.22	82.96	3.22
B. 4362	88.7	14.44	81.75	3.09
D. 62/43	27.7	14.66	82.06	2.78
Co. 421	15.3	14.70	81.84	2.76
B. 46378	4.9	15.63	83.03	2.76
B. 43253	10.8	15.18	81.24	2.52
D. 142/41	14.3	13.97	82.86	2.45

*Undue importance should not be attached to the order of merit when only a small acreage has been harvested.

TABLE I (D).—Weighted Mean Commercial Yields in Berbice, 1937.

Variety.	Acres Harvested.	Crusher Juice. Pol. %	Crusher Juice. Purity.	Tons 96° Sugar per Acre.*
		Plant Canes. 100 Acres and over.		
B. 41227	2,740.2	15.05	82.49	4.56
B. 37161	4,373.2	15.02	82.47	4.23
B. 47258	899.6	15.84	82.72	4.02
Pindar	131.4	16.50	84.24	4.01
		Under 100 Acres.		
N.C.O. 310	.8	15.34	83.40	4.75
B. 47379	18.6	14.49	82.70	4.51
B. 49119	17.7	15.66	83.17	4.38
B. 47225	54.0	14.72	84.35	4.37
B. 42231	1.3	18.65	85.70	4.23
B. 45137	19.7	15.03	82.30	4.06
B. 48372	1.0	15.75	82.25	4.00
Mixed	28.2	14.52	81.53	3.98
Trojan	12.7	16.35	82.88	3.85
H. 37-1933	5.8	13.13	78.90	3.59
B. 4362	1.5	12.97	79.57	3.53
N.C.O. 330	10.1	15.67	83.00	3.26
Q. 28	7.5	15.22	79.29	3.20
B. 47179	2.5	13.91	78.50	2.84
		First 100 Acres Ratoons. and over.		
B. 4098	148.7	14.88	82.38	4.45
B. 41227	1,577.8	15.20	81.85	4.07
B. 37161	3,870.3	15.35	82.80	4.05
B. 47225	826.7	15.31	82.91	3.91
B. 47258	122.8	15.08	82.24	3.57
Pindar	422.6	15.63	83.42	3.57
		Under 100 Acres.		
B. 45137	2.2	17.34	83.53	5.64
N.C.O. 310	5.1	15.81	82.15	4.90
Mixed	56.4	15.44	82.75	4.28
B. 46378	24.5	15.72	83.76	4.14
Co. 419	37.6	14.50	82.90	4.06
P.R. 1000	2.2	17.99	84.30	4.05
B. 4373	21.6	15.21	83.28	3.93
B. 46218	4.5	13.95	80.17	3.78
B. 4362	16.5	16.14	83.40	3.51
H. 37-1933	20.8	16.22	81.85	3.50
Eros	50.6	14.46	81.13	3.28
Co. 421	19.7	14.38	79.86	3.28
B. 43253	10.1	15.31	83.11	3.25
M. 112/34	4.9	14.94	79.20	3.22
Comus	.6	14.67	82.40	3.17
M. 134/32	6.0	15.02	81.27	3.05
D. 158/41	6.3	14.25	79.17	3.02
B. 47379	1.9	14.67	82.40	2.84
		Second 100 Acres Ratoons. and over.		
B. 41227	2,422.8	15.26	81.71	3.76
B. 4098	657.5	14.99	82.79	3.76
B. 37161	3,286.2	15.14	82.16	3.71
B. 47225	172.7	15.54	82.85	3.40
B. 4362	290.3	15.72	81.36	3.33
		Under 100 Acres.		
D. 37/45	8.3	15.84	84.00	4.84
B. 40105	7.1	15.75	85.18	4.79
B. 4733	1.1	16.31	80.20	4.65
D. 18/46	2.0	14.16	78.70	4.55
D. 19/46	2.0	14.67	78.90	4.55
D. 158/41	38.0	15.79	82.37	3.89
Eros	2.7	17.04	86.10	3.67
B. 46378	41.3	15.20	81.37	3.60
Mixed	75.1	14.81	81.78	3.47
Pindar	42.6	16.14	82.13	3.33
B. 4373	6.6	15.43	80.90	3.32
B. 34104	28.2	14.82	83.29	3.12
B. 4724	2.0	13.26	75.30	3.05
B. 47258	2.0	14.25	79.88	3.00
B. 43413	1.7	12.82	78.90	2.76
D. 62/43	50.6	11.30	62.29	2.71
		Third 100 Acres Ratoons. and over.		
B. 41227	2,962.5	15.16	82.06	3.56
D. 62/43	111.7	14.96	82.93	3.55
B. 4098	1,024.1	14.87	81.95	3.33
B. 37161	1,188.7	15.46	82.92	3.27
B. 34104	145.1	14.66	81.71	2.80
		Under 100 Acres.		
B. 47225	31.1	15.74	83.36	3.71
Mixed	31.0	15.25	81.42	3.12
B. 46378	16.4	14.96	79.83	3.09
D. 37/45	23.1	14.25	80.74	3.08
Pindar	18.0	15.38	81.95	2.99
B. 4373	2.6	15.26	82.28	

TABLE I (E).— **Weighted Mean Commercial Yields under Estate Conditions, 1957.**

Variety.	Acres Harvested.	Crusher Juice. Pol. %	Crusher Juice. Purity.	Tons 96° Sugar Per Acre.*
		Plant Canes. 100 Acres and over.		
B. 41227	6,967.9	15.15	83.40	4.39
B. 37161	8,359.8	15.38	83.56	4.14
B. 47258	1,510.0	15 46	82.84	4.07
Pindar	492.2	15 66	83.94	3.93
B. 4362	338.7	14.67	82.64	3.84
B. 47225	333.7	15.38	83.87	3.78
		Under 100 Acres.		
B. 43253	10.0	15.96	82.52	4.84
N.C.O. 310	.8	15.34	83.40	4.75
B. 46378	14.1	14.25	82.64	4.59
B. 46136	4.7	13.99	82.06	4.45
N.C.O. 330	20.3	16.61	83.64	4.44
B. 4744	25.5	15.13	84.43	4.39
B. 48372	22.6	15.66	81.72	4.38
B. 47379	62.5	14.74	82.67	4.35
B. 45137	20.9	15.76	83.48	4.33
B. 42231	1.3	18.65	85.70	4.23
Co. 419	7.2	15.18	83.65	4.06
B. 49119	25.2	15.68	83.49	4.03
B. 43413	4.6	13.74	81.56	4.02
Trojan	17.4	15.44	82.39	3.99
Mixed	51.5	15.37	83.65	3.74
H. 37-1933	5.8	13.13	79.90	3.59
B. 4098	5.5	15.42	83.79	3.45
Q. 28	7.5	15.22	79.29	3.20
B. 50135	2.9	16 18	83.96	3.15
B. 47419	16.0	14.16	83.26	3.06
B. 47179	2.5	13.91	78.50	2.84
B. 47262	1.0	16.40	84.27	2.80
		First Ratoons. 100 Acres and over.		
B. 41227	3,624 9	15.36	82.76	4.01
B. 4098	262.9	14.73	81.97	3.99
B. 46378	263.1	15.04	82.91	3.88
B. 4373	171.3	15.14	82.90	3.86
B. 47258	471.7	15.02	82.75	3.77
B. 37161	9,550.7	15.25	83.55	3.73
Pindar	1,104.2	15.41	84.08	3.67
B. 47225	2,423.4	15 38	84.04	3.64
B. 47379	313.4	14.74	82.50	3.38
B. 4362	177.5	15.61	83.94	3.15
B. 40102	118.8	13.59	80.16	2.92
		Under 100 Acres.		
B. 45137	2.2	17.34	83.53	5.64
D. 142/41	3.0	15.14	83.67	4.40
D. 37/45	41.2	14.48	82.27	4.22
Co. 419	61.8	14.63	82.79	4.14
P.R. 1000	2.2	17.99	84.30	4.05
M. 423/41	3.0	16.16	84.00	4.03
N.C.O. 330	2.8	13.91	81.30	4.00
M. 213/40	4.5	12 50	75.90	4.00
Mixed	82.7	15.51	83.41	3.91
B. 46218	4.5	13.95	80.17	3.78
B. 48372	27.8	14.10	81.26	3.76
B. 47419	69.0	15.67	85.03	3.68
B. 4744	3.4	14.67	84.10	3.53
Co. 421	19.7	14.38	79.86	3.28
H. 37-1933	24.0	15 13	82.62	3.28
B. 43253	15.6	14.97	82.41	3.26
Eros	81.4	15.61	83.17	3.20
Co. 413	.7	13.70	79.56	3.14
D. 158/41	6.3	14.25	79.17	3.02
M. 134/32	10.2	15.02	81.27	2.97
N.C.O. 310	51.9	15.81	83.91	2.83
P.O.J. 3016	3.6	16.48	85.17	2.81
P.O.J. 2967	22.8	15.34	84.19	2.73
M. 112/34	11.9	14.29	79.23	2.60
Trojan	7.2	14.74	82.33	2.39
Pepecuca	.5	13.70	79.56	2.00
Comus	5.4	14.75	82.58	1.85
H. 32-1063	.3	15.80	84.60	1.67
		Second Ratoons. 100 Acres and over.		
B. 41227	4,625.9	15.86	83.57	3.62
B. 40105	101.2	16.13	85.60	3.55
B. 4098	1,246.4	15.16	83.79	3.46
B. 37161	9,201.2	15.81	83.82	3.36
Mixed	147.9	15.13	83.14	3.36
D. 37/45	143.7	15.76	84.15	3.28
B. 47225	982.6	15.18	83.62	3.24
B. 4362	1,584.2	15.43	83.19	3.15
Pindar	172.8	15.66	83.27	3.08
B. 46378	147.0	15.33	82.01	3.01
		Under 100 Acres.		
B. 47147	.1	13.92	79.54	10.10
B. 43253	.3	16 83	83.65	6.67
B. 4733	1.1	16.31	80.20	4.65
D. 19/46	2.0	14.67	78.90	4.55
D. 18/46	2.0	14.16	78.70	4.55
P.O.J. 2967	4.3	14.08	80.38	4.37
B. 4744	15.0	16.45	82.43	4.20
		15.97	84.01	3.93

THE VARIETY AND FERTILIZER POSITION OF THE SUGAR INDUSTRY, XXIII.

BY

L. S. BIRKETT, *Sugar Agronomist.*

1. *Commercial Yields, 1957.* The average yield of commercial sugar on the sugar estates in British Guiana in 1957 was 3.62 tons per acre. The corresponding figures for 1956 and 1955 were 3.67 and 3.40 tons per acre respectively.

The yields of the various varieties on the individual estates are presented in Table I which is drawn up on a regional basis.

The data in Table I are summarised for the major cane varieties in Table II.

TABLE II.—**Weighted Average Yields for Major Cane Varieties, 1957.**

Cane Variety.	Average Yield, Tons Sugar per Acre, 1957.					Crusher Juice.	
	Plants.	1 R.	2 R.	3 R.	Old R.	Pol. %	Purity.
B.41227 ..	4.39	4.01	3.62	3.42	3.38	15.37	83.23
B.47258 ..	4.07	3.77	3.45	3.43	—	15.28	82.64
B.46378 ..	4.59	3.88	3.01	3.11	2.76	15.01	82.70
Co.419 ..	4.06	4.14	3.35	3.30	3.49	14.52	82.22
B.37161 ..	4.14	3.73	3.36	3.13	3.18	15.52	83.64
B.4098 ..	3.45	3.99	3.46	3.27	2.77	15.11	83.38
B.47225 ..	3.78	3.64	3.24	3.09	3.60	15.19	83.36
Pindar ..	3.93	3.67	3.08	2.92	—	15.46	83.28
B.4362 ..	3.84	3.15	3.15	2.98	3.09	14.99	82.72
B.47379 ..	4.35	3.38	2.85	—	—	15.10	82.74
Colony Averages. (All Varieties).	4.21	3.75	3.40	3.27	3.23	15.08	83.34

2. *Varietal Composition of the 1957 Harvest.* The total acreage and the distribution on a regional basis of the major varieties reaped in 1957 are summarised in Table III.

TABLE III.—Acreage and Percentage Distribution of the Varieties Reaped in 1957.

Variety.	English Acres.	Percentage Distribution.				
		In West Demerara.	Along Demerara River Banks.	In East Demerara.	Berbice.	Colony.
B. 37161	35,113.5	16.6	28.8	14.1	40.5	43.1
B. 41227	26,064.3	11.9	17.1	26.1	44.9	32.0
B. 4098	4,440.4	12.6	14.2	8.2	65.0	5.4
B. 47225	4,083.1	33.5	11.9	26.6	28.0	5.0
B. 4362	3,464.4	35.0	20.9	34.1	10.0	4.2
B. 47258	2,147.1	6.5	30.2	13.2	50.1	2.6
Pindar	1,879.6	4.4	22.2	39.0	34.4	2.3
Co. 419	773.6	1.4	68.1	12.3	18.2	.9
B. 46378	472.8	14.6	56.4	10.5	18.5	.6
B. 47379	419.2	17.8	10.5	66.6	5.1	.5
B. 34104	348.8	—	17.7	11.7	70.6	.4
D. 37/45	290.8	2.8	60.6	22.0	14.6	.4
B. 4373	212.8	8.6	1.2	75.0	15.2	.3
Other Varieties	1,850.2	16.0	12.0	32.4	39.6	2.3
Totals	81,560.6					100.0

The acreage occupied by the varieties which constitute the "other canes" category is given in Table IV.

TABLE IV.—Acreages of the Varieties Constituting the "Other Canes" Category, 1957.

Variety.	English Acres.	Variety.	Acres. English	Variety.	English Acres.
Co. 413	1	B. 43413	28	H. 37-1933	31
Co. 421	37	B. 44341	16	N.C.O. 310	55
Comus	9	B. 45137	24	N.C.O. 330	24
Eros	97	B. 46136	5	M. 134/32	23
D. 14/34	11	B. 46218	5	M. 112/34	19
D. 142/41	76	B. 4724	2	M. 213/40	5
D. 158/41	149	B. 4733	1	M. 423/41	3
D. 62/43	200	B. 4744	46	Pepecuca	1
D. 18/46	2	B. 47179	3	P.O.J. 2967	28
D. 19/46	2	B. 47262	1	P.O.J. 3016	5
B. 40102	125	B. 47419	92	P.R. 1000	2
B. 40105	144	B. 48372	61	Q. 28	8
B. 42231	1	B. 49119	26	Trojan	26
B. 43253	39	B. 50135	2	Mixed Varieties	415

B.37161 continued to be the major variety, consisting of 43.1% of the acreage reaped. This variety has however, again been outyielded on the commercial scale by B.41227, B.47258, B.46378 and Co.419. The acreages in the two latter varieties are, however, relatively small and in the case of Co. 419 at least, are selected areas.

B.41227 remains the second major cane variety with 32.0% of the acreage reaped. The continued good all-round performance of this variety is likely to result in an increase in the acreage planted in it.

B.47258 continued to give good average yields on the commercial scale, confirming the results obtained with this variety in the cane variety trials. The acreage planted in B.47258 is likely to increase.

B.46378 continued to give good yields but there has been little increase in the acreage in this variety which while capable of giving high yields tends to deteriorate rather rapidly if not reaped at its peak of maturity.

B.4098 which requires a high rainfall, gave lower than average yields as plants owing to the dry conditions that prevailed during much of 1957. However, its yields as ratoons were at normal levels for this variety.

B.47225 shewed an increase in acreage over that reaped in 1956 but this variety is unable to compete against B.41227, B.47258 and B.37161 in British Guiana and a further increase in acreage is unlikely.

Of the newer varieties, Pindar has shewn an increase in acreage but the comments made on B.47225 are equally applicable to this variety.

3. *Acreages in the Various Varieties Scheduled for Reaping in 1958.* The acreages in the various varieties which are scheduled for reaping in 1958 are given in Table V.

TABLE V.—Percentage Distribution of the Varieties to be Reaped in 1958.

Variety.	Total English Acres in the Respective Cane Varieties.	Percentage Distribution.				
		In West Demerara.	Along Demerara River Banks.	In East Demerara.	In Berbice.	Colony.
B. 37161	36,795.04	14.7	26.6	12.4	46.3	42.9
B. 41227	28,890.45	13.8	17.1	29.3	39.8	33.6
B. 47258	5,012.81	19.1	34.9	14.5	31.5	5.8
B. 47225	3,988.13	27.0	15.4	29.5	28.1	4.6
B. 4098	2,636.83	10.3	10.7	4.8	74.2	3.1
Pindar	2,216.49	7.0	30.2	28.7	34.1	2.6
B. 4362	2,141.49	40.0	14.6	29.4	16.0	2.5
Co. 419	656.09	1.7	83.4	8.9	6.0	.8
B. 47379	477.10	16.0	14.6	56.0	13.4	.6
B. 46378	428.58	14.4	62.8	9.4	13.4	.5
B. 4373	204.67	8.9	1.4	76.4	13.3	.2
B. 49119	138.99	29.2	54.5	1.5	14.8	.2
D 37/45	136.10	2.3	33.8	52.5	11.4	.2
B. 4942	131.27	5.0	95.0	—	—	.2
Other Canes	1,991.75	10.2	16.1	28.6	45.1	2.2
Totals	85,845.84					100.0

There is an increase in the acreage scheduled for reaping in 1958. However, except for an increase in B.47258 and a corresponding decrease in B.4098, the percentages of the acreage in the major and more promising newer varieties shew little change from that of 1957.

The percentage of the acreage reaped in recent years in the various leaf-scald resistance categories is shewn in Table VI.

Since the ratings shewing accepted "commercial resistance" are Resistant, Tolerant and Susceptible-Tolerant, the percentage of the crop in these categories has been increased from 44.0% in 1953 to 98.7% in 1957, while varieties rated as susceptible or very susceptible to leaf scald disease represent less than 1½ per cent of the acreage scheduled for reaping in 1958.

TABLE VI.

Category.	1953	1954	1955	1956	1957	1958*
Very Susceptible	54.4	35.3	14.3	3.1	—	—
Susceptible	1.6	2.4	3.4	2.6	1.3	1.2
Susceptible-Tolerant ..	37.7	48.8	64.3	73.1	79.5	83.5
Tolerant	1.4	4.7	6.7	7.4	7.1	6.6
Resistant	4.9	8.8	11.3	13.8	12.1	8.7

* Scheduled for reaping.

4. *The Changing Variety Pattern.* The percentage of the acreage under the various cane varieties in the Colony over the period 1946—1957 is presented in Table VII.

5. *Cycle Age of the Crops.* The distribution of the acreage under cane in plants and the various categories of ratoons for the period 1949-1958 is given in Table VIII.

TABLE VIII.

Cycle Age of the Crops.

Category.	Percentages.									
	1949.	1950.	1951.	1952.	1953.	1954.	1955.	1956.	1957.	1958.
Plants	31.2	33.1	28.8	27.8	26.1	25.0	26.1	27.9	25.1	19.7
1st Ratoons	26.5	27.4	28.2	23.4	23.9	25.1	23.9	24.5	24.8	22.5
2nd Ratoons	24.8	23.3	24.4	23.7	22.4	23.0	24.1	23.3	23.7	22.8
3rd Ratoons	15.2	12.6	15.1	18.8	18.2	17.8	18.6	17.1	16.5	19.9
4th Ratoons	2.0	3.1	3.0	5.4	8.5	7.4	5.0	5.1	7.3	9.6
Old Ratoons	.3	.5	.5	.9	.9	1.7	2.3	2.1	2.6	5.5
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE VII.—Summary of the Percentage of the Acreage under the Major Cane Varieties, 1946—1957.

Variety.	Per cent. of Total Areas in the Colony.											
	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957
P.O.J. 2878	40.4	27.6	13.6	6.9	1.6	0.4	—	—	—	—	—	—
Diamond 10	25.4	21.6	14.4	8.4	3.1	0.9	0.4	—	—	—	—	—
D. 166/34	1.6	1.0	0.5	—	—	—	—	—	—	—	—	—
Co. 419	6.5	7.7	8.2	6.8	4.5	2.7	1.7	1.4	1.5	1.4	1.4	.9
Co. 421	15.1	19.4	19.3	14.2	8.5	3.5	2.1	0.8	—	—	—	—
D. 14/34	6.4	11.3	17.4	20.6	20.2	15.0	8.6	4.9	2.7	.9	—	—
B. 34104	1.6	7.6	22.6	39.8	58.4	67.4	60.2	47.7	31.1	13.3	2.6	—
D. 200/36	—	1.5	1.9	1.7	0.7	—	—	—	—	—	—	—
B. 4098	—	—	—	—	—	—	1.3	4.6	8.7	10.3	8.1	5.4
B. 37161	—	—	—	—	1.4	3.6	9.4	14.4	19.1	29.6	39.5	43.1
B. 40105	—	—	—	—	—	—	0.5	0.7	1.8	1.5	.8	—
B. 41227	—	—	—	—	0.3	3.8	12.7	21.7	29.1	34.3	31.0	32.0
D. 142/41	—	—	—	—	0.2	1.4	1.6	1.6	1.3	.8	—	—
D. 158/41	—	—	—	—	—	—	0.3	0.4	.6	5	—	—
D. 62/43	—	—	—	—	—	—	—	0.3	.4	.6	—	—
B. 4362	—	—	—	—	—	—	—	0.5	2.0	4.5	4.6	4.2
D. 37/45	—	—	—	—	—	—	—	—	.3	.5	.6	.4
B. 46378	—	—	—	—	—	—	—	—	—	—	.6	.6
B. 47225	—	—	—	—	—	—	—	—	—	.8	5.0	5.0
B. 47258	—	—	—	—	—	—	—	—	—	—	.7	2.6
B. 47379	—	—	—	—	—	—	—	—	—	—	.5	.5
Pindar	—	—	—	—	—	—	—	—	—	—	1.7	2.3
B. 4373	—	—	—	—	—	—	—	—	—	—	—	.3
Other Varieties	3.0	2.3	2.1	1.6	1.1	1.3	1.2	1.0	1.4	1.0	2.9	2.7

It will be seen that there is a tendency to increase the percentage of the area in fourth and older ratoons. This tendency is likely to continue since the modern varieties are stronger ratooners than those of the recent past, and, provided yields are not allowed to fall below a certain moderately high level, sugar production costs are reduced by this practice.

6. *Fertilizers.* The quantities of, and the expenditure on, the various fertilizers used on the sugar estates in British Guiana for the years 1955, 1956 and 1957 are presented in Table IX.

The rate of application of nitrogen in the form of sulphate of ammonia remains at the usual standard rates although supplementary applications based on the results of foliar analysis are increasing in number. However, the rate of application of phosphates has increased as has that of potash although when considered in relation to the acreage under cane, the amounts of phosphatic and potasic fertilizers used at present must be regarded as being on a very moderate scale.

The tonnage of limestone purchased in 1957 shews an increase over that of the previous year but below that of 1955. Considering the low pH values of most of the soils on which sugar cane is grown, considerably larger quantities of limestone are required annually. The relatively high cost of this material is undoubtedly the major factor responsible for applications being kept at what may be regarded as essentially minimum calcium maintenance rates.

The expenditure on fertilizers and limestone continues to increase, the amount thus expended in 1957 by the sugar industry being in excess of four million dollars.

TABLE IX.— Values and Quantities of Fertilizers used on Sugar Estates, 1955—1957

Ammonium Sulphate.			Superphosphate.			Hyperphosphate.			Muriate of Potash.			Limestone.			Urea.			Di-ammonium Phosphate		
1955.	1956.	1957.	1955.	1956.	1957.	1955.	1956.	1957.	1955.	1956.	1957.	1955.	1956.	1957.	1955.	1956.	1957.	1955.	1956.	1957.
14,212	14,708	19,458	2,876	3,058	2,733	1,017	1,504	3,700	645	1,149	1,930	14,552	11,492	11,700	33	153	488	—	—	110
1,708,630	1,871,436	2,196,724	478,676	519,603	448,709	88,193	138,492	321,835	74,631	134,412	215,209	315,652	292,157	295,607	8,562	40,017	114,582	—	—	301,763
120.22	127.24	112.90	166.43	169.90	163.88	86.75	92.08	86.93	115.74	116.94	111.51	21.69	25.42	25.27	255.95	261.79	234.80	—	—	274.33
42.0	45.6	48.5	8.5	9.5	6.8	3.0	4.7	9.2	1.9	3.6	4.8	43.1	35.6	29.2	0.1	0.5	1.2	—	—	.3
62.8	62.0	56.4	17.6	17.2	11.5	3.2	4.6	8.3	2.7	4.5	5.5	11.6	9.7	7.6	0.3	1.3	2.9	—		7.8

REPORT ON THE SUGAR EXPERIMENT STATIONS FOR THE YEAR 1957.

SUGAR EXPERIMENT STATIONS' COMMITTEE.

The following members formed the British Guiana Sugar Experiment Stations' Committee for the year:—

The Director of Agriculture	*Chairman.*
Mr. R. R. Follett-Smith	*Messrs. Bookers Sugar Estates, Ltd.*
Dr. H. Evans	*Messrs. Bookers Sugar Estates, Ltd.*
Mr. J. Baxter	*Messrs. Bookers Sugar Estates, Ltd.*
Mr. G. Bacs	*Messrs. Bookers Sugar Estates, Ltd.*
Mr. A. G. Harley	*Messrs. Sandbach Parker & Co., Ltd.*
Mr. E. S. Douglas	*Secretary.*

RESEARCH SUB-COMMITTEE.

The personnel of the British Guiana Sugar Experiment Stations' Research Sub-Committee for 1957 was as follows:—

The Director of Agriculture	*Chairman.*
Dr. H. Evans	*Messrs. Bookers Sugar Estates, Ltd.*
Mr. A. G. Harley	*Messrs. Sandbach Parker & Co., Ltd.*
Mr. L. S. Birkett	*Sugar Agronomist.*
Mr. R. O. Williams	*Chief Research Officer, Department of Agriculture.*
Mr. J. A. Pires	*Plant Pathologist, Department of Agriculture.*
Mr. C. P. Kennard	*Entomologist. Department of Agriculture.*

STAFF OF SUGAR EXPERIMENT STATIONS.

L. S. Birkett, D.I.C.T.A., A.I.C.T.A, ...	*Sugar Agronomist.*
C. Cameron	*Field Manager.*
H. I. Gomes	*Field Assistant.*
R. Dookun	*Field Assistant.*
K. Johnson	*Field Assistant.*
B. Bhagwandin	*Field Assistant.*
K. Chung	*Statistical Assistant.*
S. Mangra	*Laboratory Assistant.*
S. Buchanan	*Typist.*

PERSONNEL CHANGES, LEAVE, Etc.

There were no changes of Personnel for the year.

Absences of the staff from duty during the year were as follows:—

	Casual Leave.	Sick Leave.
Mr. C. Cameron	—	17.6.57— 1.7.57
Mr. H. Gomes ..	15. 7.57—22.7.57 23.12.57—31.7.57	-
Mr. R. Dookun	14. 6.57— 1.7.57	—
Mr. K. Chung	22. 7.57— 7.8.57	—
Mr. S. Mangra	30. 1.57—14.2.57	—
Mr. B. Bhagwandin	28. 5.57— 4.6.57	—
Miss S. Buchanan	6. 8.57—22.8.57	23.8.57—23.9.57

EXPERIMENTS.

The results of the experiments reaped during the year have been fully reported elsewhere in this Bulletin. They consisted of eighty-nine Cane variety experiments, one cultivation cum variety experiment, eight experiments involving lime and the assessment of various sources of nitrogen and phosphate, three experiments on the growth and ripening of four "type" varieties and two experiments to determine whether different cane varieties possessed different nitrogen requirements.

SEEDLINGS INTRODUCED, Etc.

One hundred and ninety-three Cane Varieties for yield tests were received during the year from the Central Cane Breeding Station, Barbados. These were as follows:—

B. 1955 Series. B. 5503, B. 5527, B. 5557, B. 5579, B. 5599, B. 55109, B. 55111, B. 55132, B. 55137, B. 55244, B. 55250, B. 55258, B. 55304, B. 55309, B. 55317, B. 55362.

B. 1957 Series. B. 5701, B. 5702, B. 5703, B. 5704, B.5705, B. 5706, B. 5707, B. 5708, B. 5709, B. 5710, B. 5711, B. 5712, B. 5713, B. 5714, B. 5715, B. 5716, B. 5717, B. 5718, B. 5719, B. 5720, B. 5721, B. 5723, B. 5724, B. 5725, B. 5726, B. 5727, B. 5728, B. 5729, B. 5730, B. 5731, B. 5732, B. 5733, B. 5734, B. 5735, B. 5736, B. 5737, B. 5738, B. 5739, B. 5740, B. 5741, B. 5742, B. 5743, B. 5744, B. 5745, B.5746, B. 5747, B. 5748, B. 5749, B. 5750, B. 5751, B. 5752, B. 5753, B. 5754, B. 5755, B. 5756, B. 5757, B. 5758, B. 5759, B. 5760, B. 5761, B. 5762, B. 5764, B. 5765, B. 5766, B. 5767, B. 5768, B. 5769, B. 5770, B. 5771, B. 5772, B. 5773, B. 5774, B. 5775, B. 5776 to B. 57179.

In addition "fuzz" was received from the same source from which 14,447 seedlings of the D.B. 1956 series were planted out in nurseries.

Crosses made at Sophia produced 1,753 seedlings which were also planted out in nurseries during 1957.

The position in respect to varieties under test and undergoing multiplication in 1957 is presented in Table I.

TABLE I.

Varieties under Test and Undergoing Multiplication Etc., at December 31st, 1957.

Year.	Barbados.		Demerara.		Other Countries.	
	In Test.	Under Multiplication.	In Test.	Under Multiplication.	In Test.	Under Multiplication.
Prior to 1940	2	—	—	2	30	38
1940	1	—	—	—	1	—
1941	—	—	1	—	1	1
1942	1	1	—	—	—	—
1943	3	2	1	—	—	—
1944	—	1	—	—	3	3
1945	2	1	4	1	—	—
1946	3	3	7	3	—	—
1947	6	1	—	—	—	—
1948	—	—	—	—	—	—
1949	11	9	—	—	—	—
1950	14	12	—	—	—	—
1951	22	22	—	—	—	—
1952	25	25	22	21	—	—
1953	17	17	*73	—	—	—
1954	—	19	**40	**216	—	—
1955	—	16	—	**136	—	—
1956	—	—	—	**329	—	—
1957	—	177	—	—	—	—
Totals	107	306	148	708	35	42

* Demerara-Mauritius Seedlings (41), Demerara-Barbados Seedings (32).
** Demerara Seedlings (26), Demerara-Barbados Seedlings (230).
** Demerara Seedlings (99), Demerara-Barbados Seedlings (37).
** Demerara Seedlings (58), Demerara-Barbados Seedlings (271).

FINANCE.

The sum of $83,211.00 was voted from the funds of the Sugar Experiment Stations' Committee for the operation of the Station during the year. The total expenditure in 1957 amounted to $78,071.31.

Receipts from assessments for the year amounted to $42,133.28; those from the sale of canes to $29,436.13 and miscellaneous receipts to $280.74, while a balance of $12,555.72 was brought forward from 1956.

The quantity of canes sold in 1957 was 2,962.65 tons.

CONFERENCE OF B.W.I. SUGAR TECHNOLOGISTS' ASSOCIATION.

The usual bi-annual conference of the B.W.I. Sugar Technologists' Association was held at Antigua during 1957 and was attended by the Sugar Agronomist.

TABLE II.—**Statistics of Seedlings, Cane Distribution, Field Experiments, Cane and Soil Samples, Cane Sold and Visits Paid to Estates, 1948—1957**

Year.	Seedlings Basketed.	Cane Cuttings Distributed.		Field Experiments.		Cane Samples.		Soil Samples Taken.	Cane Sold to Ogle Estate.		No. of Visits to Estates.
		No. of Cuttings.	No. of Bags.	Started.	Harvested.	No. Taken and analysed.	Cane Crushed (Tons).		Deliveries (Tons).	Net Receipts. $	
1948	—	347,230	2,671	37	54	476	12	290††	2,232.05	9,892.36	162
1949	—	310,180	2,386	28	62	953	22	14†††	2,535.19	15,892.34	154
1950	—	105,720	1,762	18	65	719	24	—	3,135.25	20,080.18	154
1951	—	123,540	2,059	14	71	654	22	—	3,344.50	24,443.64	89
1952	58**	174,420	2,907	32	62	1,102	30	—	2,794.20	22,274.61	80
1953	1,133***	104,640	1,744	27	63	1,015	37	—	3,345.20	31,255.78	88
1954	8,797****	132,120	2,202	33	80	1,076	31	—	3,524.49	28,698.86	82
1955	3,149*****	139,200	2,320	29	86	1,680	44	—	3,488.40	28,561.15	83
1956	4,815*****	79,620	1,327	29	91	1,903	48	—	5,078.50	25,908.13	70
1957	17,060*****	106,110	1,768	26	103	2,100	55	—	2,962.65	28,671.62	78

1948 ††Includes 201 sent to I.C.T.A.
1949 †††Sent to Yale University.
1952 **Demerara Crosses.
1953 ***Mauritius "Fuzz".
1954 ****Barbados "Fuzz".
1955 *****Barbados "Fuzz" (2,982) and Demerara Crosses (167).
1956 *****Barbados "Fuzz" (3,928) and Demerara Crosses (887).
1957 *****Barbados "Fuzz" (15,307) and Demerara Crosses (1,753).

MISCELLANEOUS.

Statistics for recent years pertaining to the number of field experiments laid down and harvested, cane cuttings distributed, samples analysed, etc., for the period 1948—1957, are presented in Table II.

The Experiment Station was visited by a party of students from the Imperial College of Tropical Agriculture, Trinidad, under Professor T. W. Kirkpatrick, Messrs. W. J. Badcock and T. R. Houghton.

ACKNOWLEDGEMENTS.

As in the past, close contact was maintained between the Industry and the Staff of the Sugar Experiment Station.

The cordial co-operation of the Staff of the Sugar Estates and of the Sugar Experiment Station is very gratefully acknowledged.

L. S. BIRKETT,
Sugar Agronomist.

LEAF SCALD RATINGS OF SUGAR CANE VARIETIES IN BRITISH GUIANA.

By

J. A. PIRES, B.S.A., M.S.A.

The present leaf scald ratings in British Guiana of various potential commercial cane varieties forwarded from the B.W.I. Central Cane Breeding Station, Barbados, and of similar varieties raised in British Guiana and other countries, are presented in Table I, along with the ratings of a number of breeding canes.

TABLE I.

RATINGS OF VARIETIES TESTED FOR RESISTANCE TO LEAF SCALD.

Very Susceptible.	Susceptible.	Susceptible —Tolerant.	Tolerant.		Resistant.	
BARBADOS SEEDLINGS.						
B. 34104	B. 40102	B. 37161	B. 37172	B. 47216	B. 3337	B. 47214
4409	4226	41227	40105	47217	4098	47225
4410	4448	41211	4214	47258	4304	47262
4411	44254	4306	43253	47314	4373	47379
4466	44279	4362	43391	47397	43330	48259
44244	4504	43214	43413	47399	44182	48375
44341	4553	43229	44111	4847	44278	4905
4502	45151	43349	44165	4851	45188	4906
4608	4691	4506	44269	4867	4668	4945
4692	46340	4572	4530	4881	46116	49122
46281	46369	4604	4534	4888	46288	49257
47147	4733	4699	4556	4893	46295	49376
47233	4755	46136	4596	4895	46308	49380
47256	47179	46144	45137	48228	46399	50126
48125	47306	46230	45152	48231	4710	50135
48177	47348	46232	45156	48232	4738	50184
48179	47419	46339	45270	48372	4743	50267
48350	49119	46351	4681	48384	4746	50345
4968	49377	4724	4688	4942	4764	50370
49166	5028	4744	46102	4956	4765	
49186	50109	4781	46103	4966	4788	
49229	50155	47298	46150	4995	47151	
49353	51168	47380	46151	49197	47162	
5011		48351	46190	49309	51131	
5019		4970	46218	49355	51134	
5073		49301	46248	5037	51211	
50112		49354	46290	5098		
50153		49388	46293	50115		
5121		5041	46297	50141		
5178		5047	46378	50166		
51105		50275	46384	50210		
51167		50377	46394	50268		
51183		5124	4711	50311		
51190		51116	4747	50347		
51259		51156	47135	50352		
51311		51192	47204	51129		
51353						
51355						
DEMERARA SEEDLINGS.						
D. 14/34	D. 36/43	D. 26/39	D. 158/41	D. 132/45	D. 127/45	
142/41	39/43	49/41	4/43	170/45	142/45	
27/45	51/43	18/43	54/43	3/46	31/46	
56/45	55/43	10/44	1/44	9/46	49/46	
62/45	58/43	173/45	3/44	133/46		
123/45	62/43	2/46	7/44	160/46		
6/46	27/44	141/46				
83/46	37/45					
150/46	87/45					
	139/45					
	153/45					
	19/46					
	20/46					
	29/46					
	183/46					
	259/46					
	275/46					
	277/46					
OTHER CANES.						
M. 112/34	Co. 419	Diamond 10	M. 213/40	M. 134/32		
Trojan	Comus	Co. 421	M. 423/41	S.D. 94/45		
C.P. 36-111	Eros	Pindar	P.O.J. 2878	N.Co. 300		
C.P. 44-155	N.Co. 310	Ebene 1/37	P.O.J. 2967			
F. 36-819	Q. 28		P.O.J. 3016			
H. 32-8560	H. 38-2915		Pepecuca			
H. 37-1933	H. 38-4443		H. 44-3098			
H. 39-5803	H. 39-3633					
	H. 39-7028					
	C.P. 34-79					
	Cl. 41-223					
	F. 36-819					